SQUIRE'S COMPANION
TO THE
BRITISH PHARMACOPŒIA

FIFTEENTH EDITION
1890

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COMPANION

TO THE LATEST EDITION OF THE

BRITISH PHARMACOPŒIA.

FIFTEENTH EDITION.

COMPANION

TO THE LATEST EDITION OF THE

BRITISH PHARMACOPŒIA,

COMPARING THE STRENGTH OF ITS VARIOUS PREPARATIONS

WITH THOSE OF THE

UNITED STATES, AND OTHER FOREIGN PHARMACOPŒIAS.

TO WHICH ARE ADDED

NOT OFFICIAL PREPARATIONS, AND

PRACTICAL HINTS ON PRESCRIBING.

BY

PETER SQUIRE.

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Fifteenth Edition.

REVISED

BY

PETER WYATT SQUIRE, F.L.S., F.C.S.

AND

ALFRED HERBERT SQUIRE,

JOINTLY CHEMISTS IN ORDINARY ON THE ESTABLISHMENT OF THE QUEEN;
CHEMISTS IN ORDINARY TO H.R.H. THE PRINCE OF WALES.

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In Memory of

SIR JAMES CLARK, BART., K.C.B., M.D., F.R.S.

To whom, by his permission, the former Editions were dedicated, and whose death, at the mature age of 82, *was lamented by her Majesty and the whole of the Royal Family; and by the Medical Profession, of which he was one of the brightest ornaments.*

He was not only a wise physician, but a man of sound judgment and quick perception. His hand was ever ready to help the unfortunate and to assist the deserving; and some who have risen to the highest professional eminence owe their success in a great measure to his counsel and advice during their early career.

He was much interested in Pharmacy, and through his influence the Pharmaceutical Society sent its delegate to take part in the formation of the British Pharmacopœia.

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PREFACE

TO FIRST EDITION.

This Volume has been written to supply a want which has been generally felt since the publication of the British Pharmacopœia.

The weight which has been adopted by the Medical Council is the avoirdupois pound; it is divided into sixteen ounces, each of which contains 437·5 grains. This weight presents many difficulties in practice, as many of the ingredients have to be expressed in grains. The quantities of the several preparations made at different dispensing establishments will vary according to the amount of business done, so that a calculation has to be made in almost every case. This is no easy matter. If we take for example the formula for Compound Tincture of Benzoin, and wish to prepare half a gallon, it will be necessary to multiply the number of grains of each ingredient ordered by 4, and to divide the number thus obtained by 437·5, to reduce it to ounces. In these cases highly inconvenient weights are obtained, consisting for the most part of ounces and odd numbers of grains. To remedy this defect I have, as far as practicable, expressed the formulæ in parts, which may be regarded either as pounds, quarter-pounds, or ounces, or indeed any weights, English or foreign. The liquids, however, are always directed to be measured: I have therefore placed at the top of each page this general direction, "Solids by weight, liquids by measure."

It must be remembered, then, that should the parts be considered to represent ounces, the fluid ounce must be used for liquids, the avoirdupois ounce for solids. On the Continent every substance, liquid and solid, is directed to be weighed, and this has caused one of the chief difficulties I have had to encounter. The reduction to the English method has been effected in every case as accurately as possible, but as the specific gravity of each liquid has entered into the calculation, I must claim indulgence for any error which may have crept in.

Although the American weights, like those of the late London and Edinburgh Pharmacopœias, are troy, the pint is only sixteen avoirdupois ounces; this has caused an additional difficulty in obtaining an accurate comparison.

Looking at the anomalous condition of the weights and measures in England and America, we can only hope that Parliament will shortly establish some scheme by which our system may be made to harmonize, and rendered easily comparable with those of foreign countries.

The object of referring to the preparations of foreign Pharmacopœias in the present Work, is to enable prescribers to regulate the prescriptions of patients going abroad, where preparations similar in name but different in composition may be employed. For this purpose the last editions of the French, Belgian, Prussian, Austrian, and United States Pharmacopœias have been taken. This comparison may perhaps even be useful, should foreign countries attempt to assimilate their Pharmacopœias to the British or those of other countries. A similar comparison of the three Pharmacopœias which I made some years ago, was found so useful in the preparation of the British Pharmacopœia, that each member of the Committee was furnished with a copy.

The doses are given to the best of my own judgment in many cases, and in others from the most accredited authorities; and I have stated the solubility of substances in different liquids in those cases where the information seemed likely to be useful. This will enable prescribers to see at once how much the liquid present will take up, and the greater or less solubility in different fluids will indicate the best mode of prescribing.

I have also explained the action of the Tests given in the Pharmacopœia for ascertaining the purity of the substances employed; indicating in each case the particular impurity which may be suspected.

In arranging the Work, I have thought it best to class each preparation under the head of the chief drug which it contains; by this plan a prescriber who wishes to employ any particular substance will find all the preparations made from it, and see at a glance their composition and the proportions of the ingredients.

In addition to this will be found in the alphabetical order a list of preparations in each group, such as Infusions, Tinctures, etc., where the relative proportions of the active ingredients are also shown.

The medicinal properties of the respective preparations have been collated from the best authorities. I am indebted to Dr. Sieveking for various suggestions as the Work has passed through the press; and have ventured to add some hints as to the best mode of prescribing, which have from time to time occurred to me.

As the arrangement of this Volume is strictly alphabetical, an Index has been thought unnecessary.

In conclusion, I may say, that knowing something of the wants of both Pharmaceutists and Prescribers, I have endeavoured to make the book as practical as possible, and I trust that the labour bestowed upon it will not be without some result.

THE AUTHOR.

277, Oxford Street,
June, 1864.

PREFACE

TO SECOND EDITION.

The very flattering reception given to the First Edition of this work, and the fact that in one month after its publication more than three-fourths of the issue had been sold by the Publishers, have induced the Author to revise with great care the several parts of the work.

In the present Edition the medicinal properties and doses have been re-examined, the references to Foreign Pharmacopœias made more complete by the addition of the names employed in such Pharmacopœias, and although much new matter has been added, the contents of the British Pharmacopœia have been kept clear and distinct, by placing over every preparation not contained in it, the words "Not Officinal."

To this latter class there have been considerable additions made.

The proportions and doses are now annexed to all the groups, and an Index has been supplied, combined with a posological table. In short, no pains have been spared to put the information in such a form as to be very easy of reference both to the Prescriber and Dispenser.

The Author begs to thank the numerous friends who have taken an interest in the work, for their many valuable suggestions.

277, Oxford Street,
October 1, 1864.

PREFACE

TO FOURTEENTH EDITION.

The first edition of the "Companion" was written by Peter Squire in 1864, and he took an active part in each revision up to the time of his death in 1884.

The work has now been revised with the British Pharmaeopœia by his sons, who had assisted him with previous editions.

The words New, Altered, Modified, have been used to mark the changes which have taken place in the official work.

Most of the substances and preparations which now appear in the British Pharmaeopœia for the first time, have been in use for some years; in these cases the edition of the "Companion" in which they were first mentioned has been noted.

Since the last edition of this work, Belgium, France, Germany, and the United States of America, have issued new editions of their Pharmacopœias; these are compared with the new British Pharmacopœia, some of their preparations are introduced as Not-Official, and some tests which might be useful have been extracted.

Much new matter has been introduced, such as the percentage of ash obtained from commercial samples of drugs, and the specific gravity of different samples of essential oils; some of the tests have been criticised, as those of Acidum Chromicum, Amygdalæ Oleum, Æther Aceticus, Elaterium, Lupulinum, Sevum Preparatum, and others.

P. W. SQUIRE.
A. H. SQUIRE.

413, Oxford Street,
April 20, 1886.

The edition having been sold in a very short time, the work has been reprinted.

July, 1886.

The work has been again reprinted.

May, 1887.

PREFACE

TO FIFTEENTH EDITION.

This edition has been in preparation for over twelve months, and has been delayed longer than was expected owing to the large quantity of matter to be collated, digested, and condensed; also to the experimental work necessarily involved in the elucidation of controversial matter or disputed points. Some of the substances, such as Aconitine and Eucalyptol, necessitated a complete scrutiny of the literature on the subject, and the examination of specimens from various reliable sources.

A large quantity of new matter of a practical nature will be found interspersed throughout the work, partly as notes on Official substances, also under Not Official headings.

Notwithstanding much condensation, and the deletion of matter which has become obsolete, we have been compelled to enlarge the size of the book by seventy pages.

Some slight alterations have been made in the type so as to facilitate reference to the various sections into which each subject is divided.

Seven foreign Pharmacopœias have been added to our previous list, and the alterations in the new edition of the Austrian Pharmacopœia have been noted. We regret that the long-expected Official Italian Pharmacopœia has not yet appeared.

The Medicinal Properties and Therapeutic Index have been revised and compared with standard medical works, more particularly Quain's "Dictionary" and Ringer's "Therapeutics"; the references to current literature have also been extended.

The Antidotes have also received attention, and additions have been made from Murrell's "What to do in cases of Poisoning."

The Solubilities, as heretofore, are the result of actual experiment; they have been taken at 60° F. (without previous heating), except in some cases where Glycerine or Oil has been used as the solvent.

The Pharmacopœial Tests have also been scrutinised, and when at variance with results obtained from the best commercial samples, this has been noted.

Much work has been done with a view to obtain complete and at the same time correct information as to the Chemistry and Pharmacy of the Materia Medica; but the published matter in the English and foreign journals is so voluminous and often so contradictory, that we have been unable in all cases to complete the necessary experiments for arriving at a satisfactory conclusion.

Our work in this direction is being continued, and by this means we hope to maintain the reputation of the "Companion" as a standard book of reference.

P. W. SQUIRE.
A. H. SQUIRE.

413, Oxford Street,
March 1, 1890.

SYMBOLS AND ATOMIC WEIGHTS OF THE ELEMENTARY BODIES MENTIONED IN THE BRITISH PHARMACOPŒIA.

Elementary Bodies.	Symbols and Atomic weights.
Aluminium	Al = 27
Antimony (Stibium)	Sb = 120
Arsenium	As = 75
Barium	Ba = 137
Bismuth	Bi = 209
Boron	B = 11
Bromine	Br = 80
Calcium	Ca = 40
Carbon	C = 12
Cerium	Ce = 141
Chlorine	Cl = 35·5
Chromium	Cr = 52·5
Copper (Cuprum)	Cu = 63·4
Gold (Aurum)	Au = 196·5
Hydrogen	H = 1
Iodine	I = 127
Iron (Ferrum)	Fe = 56
Lead (Plumbum)	Pb = 207
Lithium	L = 7
Magnesium	Mg = 24
Manganese	Mn = 55
Mercury (Hydrargyrum)	Hg = 200
Nitrogen	N = 14
Oxygen	O = 16
Phosphorus	P = 31
Platinum	Pt = 195
Potassium (Kalium)	K = 39
Silver (Argentum)	Ag = 108
Sodium (Natrium)	Na = 23
Sulphur	S = 32
Tin (Stannum)	Sn = 118
Zinc	Zn = 65

THE WEIGHTS AND MEASURES OF THE BRITISH PHARMACOPŒIA,
AT THE TEMPERATURE OF 60° FAHRENHEIT.

WEIGHTS.

The Avoirdupois pound=16 oz.=7000 grs.
1 oz.= 437·5 grs.
1 gr.= 1 gr.

MEASURES.

The Imperial gallon contains 277·274 cubic inches of distilled water at 60° F.

C	1 gallon	= 8 pints,	weighing	10	pounds,	contains	76,800	minims.
O	1 pint	=20 fluid ounces	,,	1¼	,,	,,	9,600	,,
fl. oz.	1 fluid ounce	= 8 fluid drachms	,,	437·5	grains	,,	480	,,
fl. dr.	1 fluid drachm	=60 minims	,,	54·68	,,	,,	60	,,
♏	1 minim		,,	·91	grain	,,	1	minim.

It must be remembered that the minim is less than the grain measure; hence, although in Tinct. Opii there is 1 in 13½ grain-measures, there is only 1 in 14⅔ minims.

To find the number of gallons any rectangular vessel will hold, multiply the length in inches by the breadth, and the product by the depth in inches, then divide the total by 277·274, which is the number of cubic inches contained in the gallon.

Graduated measures require testing before use, which is easily done with good weights and scales, and distilled water. Every fluid ounce of distilled water ought to weigh an ounce avoirdupois, but there are two lines on the surface of a liquid; the upper one is that of capillary attraction to the sides of the vessel; the lower one the exact surface of the fluid. This should be on a line with the eye to measure accurately.

The Continental Pharmacopœias and that of the United States give the formulas in parts by weight; in some instances the gramme is indicated as the unit.

The British Pharmacopœia still gives the formulas in weights and measures; the proportions are also expressed in parts, but the two systems do not always agree. Liquids are as a rule ordered by measure and fluid parts, but there is no uniformity in this: for instance, Olive Oil is by measure in Unguentum Hydrargyri Nitratis, but by weight in Unguentum Hydrargyri Composita; Glycerine is by measure in the Glycerines, but by weight in Linimentum Iodi; Glacial Acetic Acid is by measure in Acetum Cantharidis and Mistura Creasoti, but by weight in Linimentum Terebinthinæ Aceticum; Castor Oil is by measure in Pilula Hydrargyri Subchloridi Composita, but by weight in Collodium Flexile.

The British Pharmacopœia is used in India and all the British colonies.

WEIGHTS AND MEASURES EMPLOYED FOR MEDICINE IN ENGLAND SCOTLAND, AND IRELAND.

Formerly the wine measure of 16 oz. to the pint, and the apothecaries' or troy weight were used for medicine.

We have now the imperial measure of 20 oz. to the pint, and the imperial pound of 16 oz., with 437·5 grs. to the oz., as ordered in the British Pharmacopœia, and the Act of Parliament insists that all sales shall be made by this imperial standard.

Permission has, however, been given to sell drugs by retail by the apothecaries' weight (troy weight).

The author has thought that, to avoid confusion, he had better confine himself in all the formulas to the oz. (=437·5 grs.) and grain, for weight, and to the fluid oz. (weighing 437·5 grs.), fluid drachm, and minim, for measure.

EQUIVALENTS OF ENGLISH WEIGHTS TO FRENCH GRAMMES.

1 pound avoirdupois	7000 grains	or	16 ounces	=	453·592	French	grammes.
	6562·5	or	15	=	425·2425	,,	,,
	6125	or	14	=	396·8930	,,	,,
	5687·5	or	13	=	368·5435	,,	,,
	5250	or	12	=	340·1940	,,	,,
	4812·5	or	11	=	311·8445	,,	,,
	4375	or	10	=	283·495	,,	,,
	3937·5	or	9	=	255·1455	,,	,,
	3500	or	8	=	226·796	,,	,,
	3062·5	or	7	=	198·4465	,,	,,
	2625	or	6	=	170·097	,,	,,
	2187·5	or	5	=	141·7475	,,	,,
	1750	or	4	=	113·398	,,	,,
	1312·5	or	3	=	85·0485	,,	,,
	875	or	2	=	56·699	,,	,,
1 ounce,	437·5	or	1	=	28·3495	,,	,,
	218·75	or	$\frac{1}{2}$	=	14·17475	,,	,,
	109·37	or	$\frac{1}{4}$	=	7·087375	,,	,,
	15·4323			=	1		
	1·543			=	·1, a decigramme.		
1 grain,	1			=	·0648 gramme.		
	·15 or $\frac{2}{13}$ nearly			=	·01, a centigramme.		
	·015 or $\frac{1}{65}$ nearly			=	·001, a milligramme (nearly).		

MEASURES, EQUIVALENTS OF FRENCH GRAMMES TO ENGLISH WEIGHTS.

1 Litre =	1 kilogramme,	1000 French grammes	=	35 ounces	and 120	grains.
		900	=	31	and $326\frac{3}{4}$	,,
		800	=	28	and 96	,,
		700	=	24	and $302\frac{3}{4}$	,,
		600	=	21	and 72	,,
		500	=	17	and $278\frac{3}{4}$	,,
		400	=	14	and 48	,,
		300	=	10	and $254\frac{3}{4}$	,,
		200	=	7	and 24	,,
1 Decilitre =	1 hectogramme,	100	=	3	and $230\frac{3}{4}$	,,
		90	=	3	and $76\frac{1}{3}$	,,
		80	=	2	and $359\frac{1}{2}$	,,
		70	=	2	and $205\frac{1}{3}$	,,
		60	=	2	and 51	,,
		50	=	1	and 334	,,
		40	=	1	and $179\frac{3}{4}$	,,
		30	=	1	and $25\frac{1}{2}$	,,
		20	=		$308\frac{2}{3}$	,,
1 Centilitre =	1 decagramme,	10	=		$154\frac{1}{3}$	,,
		5	=		$77\frac{1}{6}$	,,
1 Millilitre =	*1 gramme,	1	=	nearly	$15\frac{1}{2}$	,,
		·5	=	,,	$7\frac{3}{4}$	,,
	1 decigramme,	·1	=	,,	$1\frac{1}{2}$	,,
		·05	=	,,	$\frac{3}{4}$	,,
	1 centigramme,	·01	=	,,	$\frac{2}{13}$	,,
		·005	=	,,	$\frac{1}{13}$	,,
	1 milligramme,	·001	=	,,	$\frac{1}{65}$	,,

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* The weight of a cubic centimetre of water at its greatest density, viz. at the temperature of 4° C. or 39·2° F.

NOTE.—On the Continent and in the United States liquids are weighed, not measured.

METRICAL MEASURES.

RELATION OF THE METRICAL MEASURES TO THE MEASURES OF THE BRITISH PHARMACOPŒIA.

1 Millimetre = 0·03937 inch.
1 Centimetre = 0·39371 „
1 Decimetre = 3·93708 inches.
1 Metre = 39·37079 „

1 Cubic Centimetre = 15·43235 grain-measures.
1 Litre = $35\frac{1}{4}$ fl. oz. and 11 mins. or 15432·348 grain-measures.

LENGTH.

1 Millimetre = the thousandth part of one metre, or 0·001 metre.
1 Centimetre = the hundredth „ 0·01 „
1 Decimetre = the tenth part „ 0·1 „
1 Metre = the ten-millionth part of a quarter of the circumference of the earth = 39·37079 inches.

1 Line = $\frac{1}{12}$ inch.
1 Inch = $\frac{1}{12}$ foot.
12 Inches = 1 foot.
36 „ = 3 feet = 1 yard.
Length of pendulum vibrating seconds of mean time in the latitude of London, in a vacuum at the level of the sea . } 39·1393 inches.

It is remarkable that the English and French standards, taken from such different sources, should so nearly agree:—

The English, from the length of a pendulum vibrating seconds of mean time; from which the yard (36 inches) is computed . . } 39·1393.

The French being the ten-millionth part of a quarter of the earth's meridian, and called a metre . . . . } 39·37079.

CAPACITY.

1 Millilitre = 1 cubic centimetre, or the measure of 1 gramme of water.
1 Centilitre = 10 „ centimetres „ 10 grammes „
1 Decilitre = 100 „ „ „ 100 „ „
1 Litre = 1000 „ „ „ 1000 „ (1 kilo.)

TABLE OF COMPARISON OF THE FAHRENHEIT WITH THE CENTIGRADE* AND RÉAUMUR'S THERMOMETER.

Fahr.	Cent.	Réau.	Fahr.	Cent.	Réau.	Fahr.	Cent.	Réau.
212	100	80	136·4	58	46·4	60·8	16	12·8
210·2	99	79·2	134·6	57	45·6	59	15	12
208·4	98	78·4	132·8	56	44·8	57·2	14	11·2
206·6	97	77·6	131	55	44	55·4	13	10·4
204·8	96	76·8	129·2	54	43·2	53·6	12	9·6
203	95	76	127·4	53	42·4	51·8	11	8·8
201·2	94	75·2	125·6	52	41·6	50	10	8
199·4	93	74·4	123·8	51	40·8	48·2	9	7·2
197·6	92	73·6	122	50	40	46·4	8	6·4
195·8	91	72·8	120·2	49	39·2	44·6	7	5·6
194	90	72	118·4	48	38·4	42·8	6	4·8
192·2	89	71·2	116·6	47	37·6	41	5	4
190·4	88	70·4	114·8	46	36·8	39·2	4	3·2
188·6	87	69·6	113	45	36	37·4	3	2·4
186·8	86	68·8	111·2	44	35·2	35·6	2	1·6
185	85	68	109·4	43	34·4	33·8	1	0·8
183·2	84	67·2	107·6	42	33·6	32	0	0
181·4	83	66·4	105·8	41	32·8	30·2	— 1	— 0·8
179·6	82	65·6	104	40	32	28·4	— 2	— 1·6
177·8	81	64·8	102·2	39	31·2	26·6	— 3	— 2·4
176	80	64	100·4	38	30·4	24·8	— 4	— 3·2
174·2	79	63·2	98·6	37	29·6	23	— 5	— 4
172·4	78	62·4	96·8	36	28·8	21·2	— 6	— 4·8
170·6	77	61·6	95	35	28	19·4	— 7	— 5·6
168·8	76	60·8	93·2	34	27·2	17·6	— 8	— 6·4
167	75	60	91·4	33	26·4	15·8	— 9	— 7·2
165·2	74	59·2	89·6	32	25·6	14	—10	— 8
163·4	73	58·4	87·8	31	24·8	12·2	—11	— 8·8
161·6	72	57·6	86	30	24	10·4	—12	— 9·6
159·8	71	56·8	84·2	29	23·2	8·6	—13	—10·4
158	70	56	82·4	28	22·4	6·8	—14	—11·2
156·2	69	55·2	80·6	27	21·6	5	—15	—12
154·4	68	54·4	78·8	26	20·8	3·2	—16	—12·8
152·6	67	53·6	77	25	20	1·4	—17	—13·6
150·8	66	52·8	75·2	24	19·2	— 0·4	—18	—14·4
149	65	52	73·4	23	18·4	— 2·2	—19	—15·2
147·2	64	51·2	71·6	22	17·6	— 4	—20	—16
145·4	63	50·4	69·8	21	16·8	— 5·8	—21	—16·8
143·6	62	49·6	68	20	16	— 7·6	—22	—17·6
141·8	61	48·8	66·2	19	15·2	— 9·4	—23	—18·4
140	60	48	64·4	18	14·4	—11·2	—24	—19·2
138·2	59	47·2	62·6	17	13·6	—13	—25	—20

Reductions from one scale to another are easily made by the following calculation:—

Fahrenheit to Centigrade, deduct 32, multiply by 5, and divide by 9.
Centigrade to Fahrenheit, multiply by 9, divide by 5, and add 32.
Réaumur to Fahrenheit, multiply by 9, divide by 4, and add 32.

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* Celsius first proposed this scale, which is also called "Celsius."

ALCOHOL TABLE.

Specific Gravity at 60° F. (15·6° C.).	Absolute Alcohol by weight. Per cent.	Absolute Alcohol by volume. Per cent.	Specific Gravity at 60° F. (15·6° C.).	Absolute Alcohol by weight. Per cent.	Absolute Alcohol by volume. Per cent.
1·000	0·00	0·00	·894	60·67	68·33
·998	1·06	1·34	·892	61·50	69·11
·996	2·28	2·86	·890	62·36	69·92
·994	3·41	4·27	·888	63·26	70·77
·992	4·62	5·78	·886	64·13	71·58
·990	5·87	7·32	·884	65·00	72·38
·988	7·27	9·04	·882	65·83	73·15
·986	8·64	10·73	·880	66·70	73·93
·984	10·08	12·49	·878	67·54	74·70
·982	11·62	14·37	·876	68·38	75·45
·980	13·15	16·24	·874	69·21	76·20
·978	14·82	18·25	·872	70·04	76·94
·976	16·46	20·24	·870	70·84	77·64
·974	18·08	22·18	·868	71·67	78·36
·972	19·67	24·08	·866	72·52	79·12
·970	21·31	26·04	·864	73·38	79·86
·968	22·85	27·86	·862	74·23	80·60
·966	24·38	29·67	·860	75·14	81·40
·964	25·86	31·40	·858	76·04	82·19
·962	27·21	32·98	·856	76·88	82·90
·960	28·56	34·54	·854	77·71	83·60
·958	29·87	36·04	·852	78·52	84·27
·956	31·00	37·34	·850	79·32	84·93
·954	32·25	38·75	·848	80·13	85·59
·952	33·47	40·14	·846	80·96	86·28
·950	34·52	41·32	·844	81·76	86·93
·948	35·50	42·40	·842	82·54	87·55
·946	36·56	43·56	·840	83·31	88·16
·944	37·67	44·79	·838	84·08	88·76
·942	38·78	46·02	·836	84·88	89·38
·940	39·80	47·13	·834	85·65	89·99
·938	40·80	48·21	·832	86·42	90·58
·936	41·80	49·29	·830	87·19	91·17
·934	42·76	50·31	·828	87·96	91·75
·932	43·71	52·32	·826	88·76	92·36
·930	44·64	52·29	·824	89·54	92·24
·928	45·55	53·24	·822	90·29	93·49
·926	46·46	54·19	·820	91·00	94·00
·924	47·36	55·13	·818	91·71	94·51
·922	48·27	56·07	·816	92·44	95·03
·920	49·16	56·98	·814	93·18	95·55
·918	50·09	58·92	·812	93·92	96·08
·916	50·96	58·80	·810	94·62	96·55
·914	51·79	59·63	·808	95·32	97·02
·912	52·68	60·52	·806	96·03	97·51
·910	53·57	61·40	·804	96·70	97·94
·908	54·48	62·31	·802	97·37	98·37
·906	55·41	63·24	·800	98·03	98·80
·904	56·32	64·14	·798	98·66	99·16
·902	57·21	65·01	·796	99·29	99·55
·900	58·05	65·81	·794	99·94	99·96
·898	58·95	66·69	·7938	100·00	100·00
·896	59·83	67·53			

BEAUMÉ'S HYDROMETER COMPARED WITH THE SPECIFIC GRAVITY OF LIQUIDS HEAVIER THAN WATER.

1·000 BEING TAKEN AS THE SPECIFIC GRAVITY OF DISTILLED WATER AT 15·5° CENTIGRADE = 60° FAHRENHEIT.

Beaumé.	Sp. G.
0	1·000
1	1·007
2	1·014
3	1·021
4	1·028
5	1·036
6	1·043
7	1·051
8	1·058
9	1·066
10	1·074
11	1·082
12	1·090
13	1·098
14	1·107
15	1·115
16	1·124
17	1·133
18	1·142
19	1·151
20	1·160
21	1·169
22	1·179
23	1·188
24	1·198
25	1·208
26	1·218
27	1·229
28	1·239
29	1·250
30	1·261
31	1·272
32	1·283
33	1·294
34	1·306
35	1·318
36	1·330
37	1·342
38	1·355
39	1·367
40	1·380
41	1·394
42	1·407
43	1·421
44	1·435
45	1·449
46	1·464
47	1·479
48	1·494
49	1·510
50	1·526
51	1·542
52	1·558
53	1·575
54	1·593
55	1·610
56	1·628
57	1·647
58	1·666
59	1·685
60	1·705
61	1·725
62	1·746
63	1·767
64	1·789
65	1·811
66	1·834
67	1·857
68	1·882
69	1·906
70	1·932
71	1·958
72	1·984
73	2·011
74	2·040
75	2·069
76	2·099
77	2·130

SPECIFIC GRAVITY of Syrups, &c., may be tested with a ten-ounce measure. Ten measured ounces of simple syrup should weigh nearly thirteen ounces and one-third, representing the sp. g. 1·330.

In the formulas for the Syrups of the British Pharmacopœia some of them are directed to be made to a given weight, and the specific gravity is also stated. It can be easily ascertained what any of these weights would measure, by dividing the weight by the specific gravity; thus Syrupus Aurantii Floris is directed to weigh 72 oz., and the specific gravity to be 1·330, then 72·000 ÷ 1·330 = 54, or 54 ounces by measure.

MATERIA MEDICA TABLE

B. P. Name.	Obtained from.	Natural Order.	Geographical Source.
Acaciæ Gummi	Acacia Senegal, and other species	Leguminosæ	Kordofan, in Eastern Africa
Aconiti Folia	Aconitum Napellus	Ranunculaceæ	Britain
Aconiti Radix	,, ,,	,,	,, or Germany
Aconitina	,, ,,	,,	,, ,,
Adeps Præparatus	Sus scrofa	Pachydermata	Domesticated everywhere
Aloe Barbadensis	Aloe vulgaris	Liliaceæ	Barbadoes and Dutch West Indian Islands
Aloe Socotrina	Aloe Perryi and other species	Liliaceæ	Socotra (shipped by way of Bombay and Zanzibar)
Ammoniacum	Dorema Ammoniacum	Umbelliferæ	Persia
Amygdala Amara	Prunus Amygdalus (amara)	Rosaceæ	Morocco (Mogadore)
Amygdala Dulcis	Prunus Amygdalus (dulcis)	,,	Spain, Portugal, and south of France
Amygdalæ Oleum	Both of the above	,,	,, ,, ,,
Amylum	Triticum Sativum (wheat) Zea Mays (maize) Oryza Sativa (rice)	Graminaceæ	Cultivated in various parts of the world
Anethi Fructus	Peucedanum graveolens	Umbelliferæ	England, middle and southern Europe
Anisi Fructus	Pimpinella Anisum	Umbelliferæ	Southern Europe
Anisi Stellati Fructus	Illicium Anisatum	Magnoliaceæ	China
Anisi Oleum	Both the above		Distilled in Europe and in China
Anthemidis Flores	Anthemis nobilis	Compositæ	Britain, cultivated
Apomorphinæ Hydrochloras	Morphina or Codeina	*see* Opium.	*see* Opium
Armoraciæ Radix	Cochlearia Armoracia	Cruciferæ	Britain
Arnicæ Rhizoma	Arnica montana	Compositæ	Mountainous parts of middle and southern Europe
Asafœtida	Ferula Narthex, F. Scorodosma, and probably other species	Umbelliferæ	Afghanistan and Punjaub
Atropina	Belladonnæ Radix	Atropaceæ	
Aurantii Floris Aqua	Citrus vulgaris, and C. aurantium	Aurantiaceæ	South of Europe
Aurantii Cortex	Citrus vulgaris	,,	,,
Aurantii Fructus	,, ,,	,,	,,
Balsamum Peruvianum	Myroxylon Pereiræ	Leguminosæ	Salvador, in Central America
Balsamum Tolutanum	Myroxylon Toluifera	Leguminosæ	New Granada
Belæ Fructus	Ægle Marmelos	Aurantiaceæ	Malabar and Coromandel

OF THE ORGANIC KINGDOM.

Parts used.	Preparations into which it enters.
Gum (exuded from stem & branches)	Mist. Cretæ; Mist. Guaiaci; Mucilago Acaciæ; Pulv. Amygdalæ Co. and Pulv. Tragacanth Co. All Trochisci.
Fresh leaves and flowering tops	Extractum Aconiti.
Dried root	Linimentum, and Tinctura Aconiti, and Aconitina.
" "	Unguentum Aconitinæ.
Internal fat of the abdomen	Adeps Benzoatus; Empl. Canthar.; Unguenta Hydrargyri, Hydrarg. Nitratis, Iodi, and Terebinthinæ.
Inspissated juice of the leaf	Aloin; Enema Aloes; Ext. Aloes Barb.; Pil. Aloes Barb.; Pil. Aloes et Ferri; Pil. Cambogiæ Comp.; Pil. Colocynthidis Co.; Pil. Colocynthidis et Hyoscyami.
Inspissated juice of the leaf	Aloin; Decoct. Aloes Co.; Enema Aloes; Ext. Aloes Socotrinæ; Ext. Coloc. Co.; Pil. Aloes et Asafœtidæ; Pil. Aloes et Myrrhæ; Pil. Aloes Socot.; Pil. Rhei Co.; Tinct. Aloes; Tinct. Benzoini Co.; Vinum Aloes.
Gum-resinous exudation from stem	Emplastrum Ammoniaci c. Hydrargyro; Emplast. Galbani; Mistura Ammoniaci; Pilula Scillæ Co.; Pil. Ipecac. c. Scillâ.
Ripe seed	Oleum Amygdalæ.
Ripe seed	Oleum Amygdalæ; Pulvis Amygdalæ Compositus; Mistura Amygdalæ.
Expressed oil from seeds	Ol. Phosphoratum; Unguenta Cetacei Resinæ and Simplex.
Starch	Glycerinum Amyli; Mucilago Amyli; Enemata Aloes, Mag. Sulph., Opii, and Terebinthinæ; Pulvis Tragacanth. Co.; Suppos. Acid Carbol. c. Sapone; Suppos. Acid Tannici c. Sapone; Suppos. Morphinæ c. Sapone.
Dried fruit	Aqua Anethi; Oleum Anethi.
Dried fruit	Aqua Anisi; Oleum Anisi.
" "	Oleum Anisi.
Oil distilled from fruits	Ess. Anisi; Tinct. Camph. Co.; Tinct. Opii Ammoniata.
Single and double flower-heads or capitula (dried)	Extractum, Infusum, and Oleum Anthemidis. The latter is also in the preparation of the Extract.
Salt of the alkaloid	Injectio Apomorphinæ Hypodermica.
Fresh root	Spiritus Armoraciæ Compositus.
Dried rhizome and rootlets	Tinctura Arnicæ.
Gum-resin	Enema Asafœtidæ; Pil. Aloes et Asafœtidæ; Pil. Asafœtidæ Co.; Spiritus Ammoniæ Fœtidus; Tinctura Asafœtidæ.
Alkaloid	Unguentum Atropinæ, Atropinæ Sulphas, Lamellæ Atropinæ and Liquor Atropinæ Sulphatis.
Distilled water of flowers	Syrupus Aurantii Floris.
Dried outer part of the rind	Inf. Aurantii, Inf. Aurantii Comp.; Inf. Gentian. Comp.; Tinct. Aurantii; Tinct. Cinchon. Comp.; Tinct. Gentian. Comp.; Spirit. Armoraciæ Comp.; also with Tinctura Aurantii are made: Mist. Ferri Aromatica, Tinct. Quininæ, and Syrupus Aurantii.
Ripe fruit	Tinct. Aurantii Recentis, Vinum Aurantii.
Balsam, from the trunk.	
Balsam, from the trunk	Syrupus Tolutanus; Tinct. Tolutana; Pil. Phosphori; Tinct. Benzoini Co.
Dried half-ripe fruit	Extractum Belæ Liquidum.

B. P. Name.	Obtained from.	Natural Order.	Geographical Source.
Belladonnæ Folia	Atropa Belladonna	Atropaceæ	Britain
Belladonnæ Radix	,, ,,	,,	Britain or Germany
Benzoinum	Styrax Benzoin and other species	Styraceæ	Siam and Sumatra
Buchu Folia	Barosma betulina Barosma crenulata Barosma serratifolia	Rutaceæ	Cape of Good Hope
Caffeina	Camellia Thea	Ternstromiaceæ	China, Japan, and Upper India.
	Coffea Arabica	Cinchonaceæ	Cultivated throughout the tropics (native of Abyssinia)
Cajuputi Oleum	Melaleuca minor	Myrtaceæ	Imported from Batavia and Singapore
Calumbæ Radix	Jateorhiza Calumba	Menispermaceæ	Eastern Africa, between Ibo and the Zambesi
Cambogia	Garcinia Hanburii	Guttiferæ	Siam
Camphora	Cinnamomum Camphora	Lauraceæ	China (Formosa) and Japan (purified in Britain)
Canellæ Cortex	Canella alba	Canellaceæ	West Indies
Cannabis Indica	Cannabis sativa	Cannabinaceæ	India
Cantharis	Cantharis vesicatoria	Coleoptera	Hungary and Southern Russia
Capsici Fructus	Capsicum fastigiatum	Solanaceæ	Zanzibar
Cardamomi Semina	Elettaria Cardamomum	Zingiberaceæ	Malabar
Carui Fructus	Carum Carui	Umbelliferæ	England and Germany
Caryophyllum	Eugenia Caryophyllata	Myrtaceæ	Zanzibar and Pemba
Cascara Sagrada	Rhamnus Purshianus	Rhamnaceæ	California
Cascarillæ Cortex	Croton Eluteria	Euphorbiaceæ	Bahama Islands
Cassiæ Pulpa	Cassia Fistula	Leguminosæ	East and West Indies
Catechu	Uncaria Gambier	Cinchonaceæ	Singapore, and other places in the Eastern Archipelago
Cera Flava	Apis mellifica	Hymenoptera	Indigenous
Cerevisiæ Fermentum.	Saccharomyces Cerevisiæ	Fungi	. . . .
Cetaceum	Physeter macrocephalus	Cetacea	Pacific and Indian Oceans
Cetraria	Cetraria Islandica	Lichenes	North of Europe
Chirata	Ophelia Chirata	Gentianaceæ	Northern India
Chrysarobinum	Andira Araroba	Leguminosæ	Bahia (Brazil).
Cimicifugæ Rhizoma	Cimicifuga Racemosa	Ranunculaceæ	North America

Parts used.	Preparations into which it enters.
Leaves, with or without branches	Fresh leaves and branches = Extract. Belladonnæ; Succus Belladonnæ; Dried leaves = Tinct. Belladonnæ.
Dried root	Atropina; Extract. Belladonnæ Alcoholicum; Linimentum Belladonnæ.
Balsamic resin	Acidum Benzoicum; Adeps Benzoatus (and Ointments containing it); Tinct. Benzoini Co.; Ung. Cetacei.
Dried leaves	Infusum Buchu, Tinctura Buchu.
Alkaloid from leaves of tea or seeds of coffee	Caffeinæ Citras.
Oil distilled from the leaves	Spiritus Cajuputi, Lin. Crotonis.
Dried root	Extractum, Infusum, and Tinct. Calumbæ; Mist. Ferri Aromat.
Gum-resin	Pilula Cambogiæ Composita.
A stearoptene obtained from the wood	Aqua Camph.; Linimenta Aconiti, Belladonnæ, Camph., Camph. Co., Chloroformi, Hydrargyri, Opii, Saponis, Sinapis Comp., Terebinthinæ, and Tereb. Aceticum; Spiritus Camph.; Tinct. Camph. Co.; Ung. Hydrarg. Co.
Dried bark deprived of its corky layer	Vinum Rhei.
Dried flowering or fruiting tops of female plants	Extractum Cannabis Ind.; Tinctura Cannab. Ind.
The dried beetle	Acetum, Emplastrum, Tinctura and Unguentum Cantharidis; Charta Epispastica; Liquor Epispast.; Emplast. Calefaciens.
Dried ripe fruit	Tinctura Capsici.
Seeds of the dried capsules	Tinct. Cardam. Co.; Ext. Coloc. Co.; Pulv. Cinnam. Co.; Pulv. Cretæ Arom.; Tinct. Gentian. Co.; Tinct. Rhei; Vinum Aloes.
Dried fruit	Aqua and Oleum Carui; Confectio Opii; Conf. Piperis; Pulvis Opii Compositus; Tinct. Cardam. Co.; Tinct. Sennæ.
Dried flower-buds	Infusum and Oleum Caryophylli; Inf. Aurant. Co.; Mist. Ferri Arom.; Vinum Opii.
Dried bark	Ext. Cascaræ Sagradæ; Ext. Cascar. Sagrad. Liquid.
Dried bark	Infusum and Tinctura Cascarillæ.
Pulp from the pods	Confectio Sennæ.
An extract of the leaves and young shoots	Infusum Catechu, Pulvis Catechu Comp., Tinctura Catechu, Trochisci Catechu.
Honeycomb	Emplast. Calefaciens, Cantharidis, Galbani, Picis, Saponis fuscum; Pil. Phosphori; Unguenta Cantharidis, Hydrarg. Co., Picis Liquid., Resinæ, Sabinæ, Terebinthinæ, Cera Alba:—Charta Epispastica, Unguenta Cetacei and Simplex.
Beer yeast	Cataplasma Fermenti.
A concrete fatty substance, mixed with oil, obtained from the head of the sperm whale, purified	Charta Epispastica; Unguentum Cetacei.
The entire lichen dried	Decoctum Cetrariæ.
Entire plant	Infusum and Tinctura Chiratæ.
Medullary matter of stem and branches	Ung. Chrysarobini.
Dried rhizome and rootlets	Ext. Cimicifugæ Liquid; Tinct. Cimicifugæ.

B. P. Name	Obtained from.	Natural Order.	Geographical Source.
Cinchonæ Cortex	Cinchona Calisaya Cinchona succirubra Cinchona lancifolia	Cinchonaceæ	South America, India, Ceylon, and Java
Cinchonæ Rubræ Cortex	Cinchona succirubra	Cinchonaceæ	South America, cultivated in East Indies
Cinnamomi Cortex	Cinnamomum Zeylanicum	Lauraceæ	Ceylon
Coca	Erythroxylon Coca	Erythroxylaceæ	Peru
CocainæHydrochloras	,, ,,	,,	,,
Coccus	Coccus Cacti	Hemiptera	Mexico and Teneriffe
Colchici Cormus	Colchicum autumnale	Melanthaceæ	Indigenous
Colchici Semina	,, ,,	,,	,,
Colocynthidis Pulpa	Citrullus Colocynthis	Cucurbitaceæ	Northern Africa, Syria, and Spain
Conii Folia	Conium maculatum	Umbelliferæ	Britain
Conii Fructus	,, ,,	,,	,,
Copaiba	Copaifera Langsdorffii and other species	Leguminosæ	Valley of the Amazon
Coriandri Fructus	Coriandrum sativum	Umbelliferæ	Britain
Crocus	Crocus sativus	Iridaceæ	Spain, France, and Italy
Crotonis Oleum	Croton Tiglium	Euphorbiaceæ	Hindostan, Ceylon, and Indian Archipelago
Cubeba	Piper Cubeba	Piperaceæ	Java and Sumatra
Cuspariæ Cortex	Galipea Cusparia	Rutaceæ	Tropical South America
Cusso	Hagenia abyssinica	Rosaceæ	Abyssinia
Digitalis Folia	Digitalis purpurea	Scrophulariaceæ	Indigenous
Ecballii Fructus	Ecballium Elaterium	Cucurbitaceæ	Britain
Elemi	Referred to Canarium commune	Amyridaceæ	Manila
Ergota	Secale cereale	Graminaceæ	Europe
Eucalypti Oleum	Eucalyptus Globulus, Eucalyptus Amygdalina	Myrtaceæ	Australia
Farina Tritici	Triticum sativum	Graminaceæ	Britain
Fel Bovinum Purificatum	Bos Taurus	Ruminantia	Domesticated everywhere
Ficus	Ficus Carica	Moraceæ	Smyrna
Filix-Mas	Aspidium Filix-mas	Filices	Indigenous
Fœniculi Fructus	Fœniculum capillaecum	Umbelliferæ	Central and Southern Europe, also India and China
Galbanum	Ferula galbaniflua, Ferula rubricaulis, and probably other species	Umbelliferæ	Persia
Galla	Quercus lusitanica	Cupuliferæ	Asia Minor
Gelsemium	Gelsemium nitidum	Loganiaceæ	Southern part of the United States of America

Parts used.	Preparations into which it enters.
Dried bark	Cinchonidinæ Sulphas; Cinchoninæ Sulphas; Quininæ Hydrochloras; Quininæ Sulphas.
Dried bark of stem and branches of cultivated plants	Decoct. Cinchonæ; Ext. Cinchon. Liquid; Inf. Cinchon. Acid; Tinct. Cinchonæ; Tinct. Cinchon. Comp.; Mist. Ferri Ar.
The dried inner bark of shoots from the truncated stocks or stools	Aqua, Oleum, Pulvis Co., and Tinct. Cinnamomi; Infusum, Pulvis Co., and Tinct. Catechu; Decoct. Hæmatoxyli; Pulv. Cretæ Arom.; Pulv. Kino Co.; Tinct. Cardam. Co.; Tinct. Lavand. Co.; Vinum Opii.
Dried leaves	Ext. Cocæ Liquid; Cocainæ Hydrochloras.
Salt of the alkaloid	Lamellæ Cocainæ.
Dried female insect	Tinctura Cocci; Tinct. Cardam. Co.; Tinct. Cinchonæ Co.
Fresh and dried corm	Extractum, Extractum Aceticum and Vinum Colchici.
Dried ripe seeds	Tinctura Colchici Seminum.
Dried peeled fruit freed from seeds	Extractum Coloc. Co.; Pil. Coloc. Co.; Pil. Coloc. et Hyoscyam.
Fresh leaves and young branches	Cataplasma, Extractum, Pilula Comp., and Succus Conii Vapor Coninæ (from Succus).
Dried fruit	Tinctura Conii.
Oleo-resin	Oleum Copaibæ.
Dried ripe fruit	Oleum Coriandri; Conf. Sennæ; Syrupus et Tinct. Rhei; Syrupus et Tinct. Sennæ.
The dried stigmas and top of the style	Tinctura Croci; Decoct. Aloes Co.; Pil. Aloes et Myrrh.; Pulv. Cretæ Aromat.; Tinct. Cinchon. Co.; Tinct. Opii Ammon.; Tinct. Rhei.
Expressed oil from the seeds	Linimentum Crotonis.
Dried unripe fruit	Oleum Cubebæ; Oleo-resina Cubebæ; Tinctura Cubebæ.
Dried bark	Infusum Cuspariæ.
Dried panicles	Infusum Cusso.
Dried leaf	Infusum and Tinctura Digitalis.
Nearly ripe fruit	Elaterium, Elaterinum, Pulvis Elaterini Compositus.
A concrete resinous exudation	Unguentum Elemi.
The sclerotium of *Claviceps purpurea*, produced within the paleæ of the common Rye (*Secale cereale*), and replacing the grain	Extractum Ergotæ Liquidum, Infusum Ergotæ, and Tinctura Ergotæ, Ergotinum, Inject. Ergotin. Hypoderm.
Distilled oil from the fresh leaves	Unguentum Eucalypti.
The grain of wheat ground and sifted	Cataplasma Fermenti.
The purified gall.	
Dried fruit	Confectio Sennæ.
Dried rhizome	Extractum Filicis Liquidum.
Dried fruit	Aqua Fœniculi; Pulv. Glycyrrhizæ Co.
Gum resin	Emplast. Galbani; Pil. Asafœtidæ Co.
Excrescences caused by the punctures and deposited ova of *Cynips Gallæ Tinctoriæ*	Acidum Gallicum and Tannicum; Tinct. Gallæ, Ung. Gallæ, and Ung. Gallæ c. Opio.
Dried rhizome and rootlets	Extract. Gelsemii Alcoholicum; Tinct. Gelsemii.

B. P. Name.	Obtained from.	Natural Order.	Geographical Source.
Gentianæ Radix	Gentiana lutea	Gentianaceæ	Central and Southern Europe (mountains)
Glycyrrhizæ Radix	Glycyrrhiza glabra	Leguminosæ	England, France, Germany, and Spain
Gossypium	Gossypium barbadense and other species	Malvaceæ	Warm and tropical regions
Granati Radicis Cortex	Punica Granatum	Granateæ	Shores of the Mediterranean and Central Asia
Guaiaci Lignum Guaiaci Resina	Guaiacum officinale or Guaiacum sanctum	Zygophyllaceæ	St. Domingo and Jamaica
Gutta Percha	Dichopsis Gutta and several other trees	Sapotaceæ	East Indian Islands
Hæmatoxyli Lignum	Hæmatoxylon Campechianum	Leguminosæ	Campeachy, Honduras, and Jamaica
Hemidesmi Radix	Hemidesmus Indicus	Asclepiadaceæ	India
Hirudo	Sanguisuga medicinalis (speckled) officinalis (green)	Sanguisuga	Spain, France, Italy, Hungary
Hordeum Decorticatum	Hordeum distichon	Graminaceæ	Britain
Hyoscyami Folia	Hyoscyamus niger	Atropaceæ	Britain
Ipecacuanha	Cephaëlis Ipecacuanha	Cinchonaceæ	Brazil
Jaborandi	Pilocarpus pennatifolius	Rutaceæ	Pernambuco (Brazil)
Jalapa	Ipomœa Purga	Convolvulaceæ	Mexico
Juniperi Oleum	Juniperus communis	Coniferæ	North of Europe, indigenous
Kamala	Mallotus philippinensis	Euphorbiaceæ	India
Kino	Pterocarpus Marsupium	Leguminosæ	Malabar
Krameriæ Radix	Krameria triandra Krameria Ixina	Polygalaceæ	Peru
Lac	Bos Taurus	Ruminantia	Domesticated everywhere
Lactuca	Lactuca virosa	Compositæ	Indigenous
Laricis Cortex	Pinus Larix	Coniferæ	Indigenous
Laurocerasi Folia	Prunus Laurocerasus	Rosaceæ	Britain
Lavandulæ Oleum	Lavandula vera	Labiatæ	England (also the western shores of the Mediterranean)
Limonis Cortex	Citrus Limonum	Aurantiaceæ	South of Europe
Limonis Succus	,, ,,	,,	,, ,,
Lini Semina	Linum usitatissimum	Linaceæ	Britain
Lobelia	Lobelia inflata	Lobeliaceæ	North America
Lupulus	Humulus Lupulus	Cannabinaceæ	England
Manna	Fraxinus Ornus	Oleaceæ	Calabria and Sicily
Mastiche	Pistacia Lentiscus	Anacardiaceæ	Island of Scio
Maticæ Folia	Piper angustifolium	Piperaceæ	Northern part of South America
Mel	Apis mellifica	Hymenoptera	Universally domesticated

Parts used.	Preparations into which it enters.
Dried root	Extractum, Infusum Co., and Tinct. Gentianæ Co.
Root and underground stem, fresh and dried	Extract., Ext. Liquid. and Pulv. Glycyrrh. Co.; Conf. Tereb. Dec. Sarsæ Co.; Inf. Lini; Pil. Hydr.; Pil. Ferri Iodid.
Hairs of the seed	Pyroxylin.
Dried bark of the root	Decoctum Granati Radicis.
Heart-wood in chips	Decoct. Sarsæ Co.
Resin	Mist. Guaiaci; Pil. Hydrarg. Subchlor. Co.; Tinct. Guaiaci Ammon.
Concrete juice	Liquor Guttæ Perchæ.
Sliced heart-wood	Decoctum and Extractum Hæmatoxyli.
Dried root	Syrupus Hemidesmi.
Leech.	
Husked seeds	Decoctum Hordei.
Fresh leaves and flowers, with branches	Extractum, Succus, and Pil. Coloc. et Hyoscyam.
Dried leaves and flowering tops .	Tinctura Hyoscyami.
Dried root	Pil. Ipecac. c. Scillâ; Pulv. Ipecac. Co.; Trochisci Ipecac.; Trochisci Morphinæ et Ipecac.; Vinum Ipecac.; Pil. Conii Co.
Dried leaflets	Extract., Infusum, and Tinct. Jaborandi; Pilocarpinæ Nitras.
Dried tubercules	Extractum, Pulv. Co., Resina, and Tinctura Jalapæ; Pilula Scammonii Compositus; Pulvis Scammonii Comp.
Oil from the unripe fruit . . .	Spiritus Juniperi, and with it Mistura Creasoti.
Minute glands and hairs obtained from the surface of the fruits.	
Inspissated juice from the trunk .	Pulvis Compositus, Tinct. Kino; Pulv. Catechu Co.
Dried root	Extractum, Infusum, Tinctura Krameriæ; Pulv. Catechu Co.
Fresh milk	Mistura Scammonii.
Flowering herb	Extractum Lactucæ.
Dried inner bark	Tinct. Laricis.
Fresh leaves	Aqua Laurocerasi.
Distilled oil from flowers . . .	Spiritus and Tinctura Lavandulæ Comp.; Lin. Camph. Co.
Peel	Oleum, Syrupus, Tinctura Limonis; Inf. Aurant. Co.; Inf. Gentian. Co.
Juice	Syrupus Limonis.
Dried ripe seeds, entire and reduced to powder	Farina Lini, Infusum Lini, Oleum Lini. All Cataplasmata (except Fermenti) from Farina Lini.
Dried flowering herb	Tinctura Lobeliæ. Tinct. Lobeliæ Ætherea.
Dried strobiles	Extractum, Infusum, Tinctura Lupuli, Lupulinum.
Concrete saccharine exudation from the stem.	
Concrete resinous exudation from the stem and branches.	
Dried leaves	Infusum Maticæ.
Saccharine secretion in honeycomb	Mel depuratum; Mel Boracis; Oxymel; Oxymel Scillæ; Conf. Piper.; Conf. Scammon.; Conf. Terebinth.

B. P. Name.	Obtained from.	Natural Order.	Geographical Source.
Menthæ piperitæ Oleum	Mentha piperita	Labiatæ	Britain
Menthæ viridis Oleum	Mentha viridis	Labiatæ	Britain
Menthol	Mentha Arvensis, var. Piperascens and glabrata Mentha Piperita	Labiatæ	China and Japan United States
Mezerei Cortex	Daphne Mezereum Daphne Laureola	Thymelaceæ	Mountainous parts of Europe
Mica Panis	Triticum sativum	Graminaceæ	Indigenous
Mori Succus	Morus nigra	Moraceæ	Cultivated in Britain; native of Persia and China
Morphinæ Acetas	Opium	*see* Opium.	*see* Opium
Morphinæ Hydrochloras	,,	,,	,,
Morphinæ Sulphas	,,	,,	,,
Morrhuæ Oleum	Gadus Morrhua	(Genus) Acipenser	Coasts of Norway, France, and England, Newfoundland and Labrador
Moschus	Moschus moschiferus	Ruminantia	Native of Central Asia; imported from China and India
Myristica	Myristica fragrans	Myristicaceæ	Banda Islands of the Malayan Archipelago
Myristicæ Oleum	,, ,,	,,	,,
Myristicæ Oleum Expressum	,, ,,	,,	,,
Myrrha	Balsamodendron Myrrha	Amyridaceæ	Arabia Felix and Abyssinia
Nectandræ Cortex	Nectandra Rodiæi	Lauraceæ	British Guiana
Nux Vomica	Strychnos Nux-vomica	Loganiaceæ	East Indies
Olivæ Oleum	Olea Europæa	Oleaceæ	South of Europe
Opium	Papaver somniferum	Papaveraceæ	Asia Minor (Smyrna)
Ovi Vitellus	Gallus Bankiva	(Class) Aves	Domesticated everywhere
Papaveris Capsulæ	Papaver somniferum	Papaveraceæ	Britain
Pareiræ Radix	Chondrodendron tomentosum	Menispermaceæ	Brazil
Pepsin	Sus scrofa Ovis aries Bos taurus	Pachydermata Ruminantia ,,	Domesticated everywhere
Physostigmatis Semen	Physostigma venenosum	Leguminosæ	Western Africa
Pimenta	Pimenta officinalis	Myrtaceæ	West Indies
Pini Sylvestris Oleum	Pinus Sylvestris	Coniferæ	Scotland and Russia
Piper nigrum	Piper nigrum	Piperaceæ	East Indies
Pix Burgundica	Pinus Picea	Coniferæ	Germany
Pix liquida	Pinus sylvestris and other species	Coniferæ	Scotland, Russia, Denmark, and Norway
Podophylli Rhizoma	Podophyllum peltatum	Ranunculaceæ (*Berberideæ, Hanbury*)	North America

Parts used.	Preparations into which it enters.
Oil distilled in Britain	Aqua, Essentia, and Spiritus Menthæ Piperitæ; Pil. Rhei Co. Tinct. Chloroformi et Morphinæ.
Oil distilled in Britain	Aqua Menthæ Viridis.
Stearoptene of oil.	
Dried bark	Extractum Mezerei Æthereum; Decoctum Sarsæ Compositum.
Crumb of bread of wheat flour	Cataplasma Carbonis.
Juice of ripe fruit	Syrupus Mori.
Salt of the alkaloid	Injectio Morphinæ Hypodermica, and Liquor Morphinæ Acetatis.
” ” ”	Liquor Morph. Hydrochlor., Suppos. Morph., also c. Sapone, Tinct. Chlorof. et Morph., Trochisci Morph., also c. Ipecac.
” ” ”	
Oil of fresh liver of the Cod.	
Dried secretion from the preputial follicles.	
Dried seed divested of its coat	Oleum, and Oleum Myristicæ Expressum; Pulv. Catechu Co.; Pulv. Cretæ Aromat.; Sp. Armoraciæ Co.; Tinct. Lavand. Co.
Oil distilled from seed	Pil. Aloes Socot., Spir. Ammon. Arom.
Expressed oil from seed	Emplastra Calefaciens and Picis.
Gum-resin (from the stem)	Tinct. Myrrh.; Pil. Aloes et Myrrh.; Decoct. Aloes Co. Mist. Ferri Co.; Pil. Asafœtidæ Co.; Pil. Rhei Co.
Dried bark	Beberinæ Sulphas.
Seeds	Extractum and Tinctura Nucis Vomicæ; Strychnina.
Expressed oil from the ripe fruit	Charta Epispastica; Emplastra Ammoniac. c. Hydrarg., Hydrargo, Picis, Plumbi, and Saponis Fuscum; Enema Mag. Sulph.; Linimenta Ammoniæ, Calcis, and Camphoræ Sapo Durus and Mollis; Unguenta Cantharidis, Hydrarg. Comp., Hydrarg. Nitratis, and Veratrinæ.
Inspissated juice from unripe capsules	Preparations many. *Vide* Opium.
Yolk	Mistura Spiritûs Vini Gallici.
Nearly ripe dried capsules of White Poppy	Decoctum, Extractum, and Syrupus Papaveris.
Dried root	Decoctum, Extractum, and Extractum Pareiræ Liquidum.
Preparation of the mucous lining of the fresh and healthy stomach	
Dried seed	Extractum Physostigmatis; Physostigmina; Lamellæ Physostigminæ.
Dried unripe fruits	Aqua, Oleum Pimentæ.
Oil distilled from fresh leaves	Vapor Olei Pini Sylvestris.
Dried unripe fruits	Confectio Opii; Confectio Piperis; Pulv. Opii Co.
Resinous exudation from the stem	Emplastrum Ferri; Emplastrum Picis.
Bituminous liquid obtained from the wood	Unguentum Picis Liquidæ.
Dried rhizome and rootlets	Resina Podophylli, and from it Tinctura Podophylli.

B. P. Name.	Obtained from	Natural Order.	Geographical Source.
Prunum	Prunus domestica	Rosaceæ	South of France
Pterocarpi Lignum	Pterocarpus santalinus	Leguminosæ	Madras
Pyrethri Radix	Anacyclus Pyrethrum	Compositæ	Algeria
Quassiæ Lignum	Picræna excelsa	Simarubaceæ	Jamaica
Quercûs Cortex	Quercus Robur	Cupuliferæ	Britain
Quininæ Hydrochlor.	Cinchonæ Cortex	Cinchonaceæ	South America, India, Ceylon, and Java
Quininæ Sulphas	,, ,,	,,	
Resina	Various species of Pinus.	Coniferæ	America
Rhamni Frangulæ Cortex	Rhamnus Frangula	Rhamnaceæ	Europe
Rhamni Purshiani Cortex	*See* Cascara Sagrada.		
Rhei Radix	Rheum palmatum, Rheum officinale, and probably other species	Polygonaceæ	Collected and prepared in China and Thibet
Rhœados Petala	Papaver Rhœas	Papaveraceæ	Indigenous
Ricini Oleum	Ricinus communis	Euphorbiaceæ	India
Rosæ Caninæ Fructus	Rosa canina, and other indigenous allied species	Rosaceæ	Indigenous
Rosæ Centifoliæ Petala	Rosa centifolia		Britain
Rosæ Gallicæ Petala	Rosa gallica		Britain
Rosmarini Oleum	Rosmarinus officinalis.	Labiatæ	South of Europe. Asia Minor; cultivated in England
Rutæ Oleum	Ruta graveolens	Rutaceæ	South of Europe
Sabadilla	Schænocaulon officinale	Melanthaceæ	Mexico
Sabinæ Cacumina	Juniperus Sabina	Coniferæ	Britain
Saccharum Purificatum	Saccharum officinarum Beta vulgaris	Graminaceæ Chenopodiaceæ	West Indies Europe
Saccharum Lactis	Bos Taurus	Ruminantia	Domesticated everywhere
Salicinum	Salix alba, and other species of Salix and various species of Populus	Salicaceæ	Temperate regions of the Northern Hemisphere
Sambuci Flores	Sambucus nigra.	Caprifoliaceæ	Indigenous
Santali Oleum	Santalum album	Santalaceæ	India
Santonica	Artemisia maritima, var. Stechmanniana	Compositæ	Russia
Sarsæ Radix	Smilax officinalis	Smilaceæ	Native of Central America; imported from Jamaica
Sassafras Radix	Sassafras officinale	Lauraceæ	North America
Scammoniæ Radix	Convolvulus Scammonia	Convolvulaceæ	Syria and Asia Minor
Scammoniæ Resina	,, ,,	,,	,, ,, ,,
Scammonium	,, ,,	,,	,, ,, ,,
Scilla	Urginea Scilla	Liliaceæ	Mediterranean coasts
Scoparii Cacumina	Cytisus scoparius	Leguminosæ	Indigenous
Senegæ Radix	Polygala Senega	Polygalaceæ	North America
Senna Alexandrina	Cassia acutifolia.	Leguminosæ	Soudan, imported from Alexandria
Senna Indica	Cassia angustifolia.	Leguminosæ	Southern India

Parts used.	Preparations into which it enters.
Dried drupe of the plum	Confectio Sennæ.
Heart-wood	Tinctura Lavandulæ Composita.
Dried root	Tinctura Pyrethri.
Wood	Extractum, Infusum, and Tinctura Quassiæ.
Dried bark of smaller branches and young stems	Decoctum Quercûs.
Salt of the alkaloid	Tinctura Quininæ.
,, ,, ,,	Ferri et Quininæ Citras, Tinct. Quininæ Ammon. Vinum Quininæ
The residue left after the distillation of the Oil of Turpentine from the crudo Oleo-resin.	Charta Epispastica, Emplastrum and Unguentum Resinæ. Ung. Terebinth., Emplastra Calefaciens, Cantharidis, Picis, Plumbi Iodidi, and Saponis.
Dried bark	Ext. Rhamni Frangulæ; Ext. Rhamni Frangulæ Liquid.
Dried root deprived of the bark	Extractum Rhei, Infusum Rhei, Pilula Rhei Co., Pulvis Rhei Co., Syrupus Rhei, Tinctura Rhei, and Vinum Rhei.
Fresh petals	Syrupus Rhœados.
Oil expressed from the seeds	Collodium Flexile, Lin. Sinapis Comp., Pil. Hydrarg. Subchlor. Co.
Ripe fruit	Confectio Rosæ Caninæ.
Fresh fully expanded petals.	Aqua Rosæ.
Fresh and dried unexpanded petals	Confectio and Syrupus Rosæ Gallicæ; Infusum Rosæ Acidum.
Oil distilled from the flowering tops	Spiritus Rosmarini; Lin. Saponis and Tinct. Lavand. Comp.
Oil distilled from fresh herb	
Dried ripe seeds freed from their pericarps	Veratrina.
Fresh and dried tops	Oleum, Tinctura, and Unguentum Sabinæ.
Juice of the stem	All Syrups and Lozenges, and several other preparations.
Juice of the root	
Whey of milk, evaporated	Pulv. Elaterini Comp.
Crystalline glucoside obtained from the bark	
Fresh flowers	Aqua Sambuci.
Volatile oil distilled from the wood	
Dried unexpanded flower-heads or capitula	Santoninum.
Dried root	Decoctum Sarsæ, Decoct. Sarsæ Co., Extractum Sarsæ Liquidum.
Dried root	Decoctum Sarsæ Co.
Dried root	Resina Scammoniæ.
Resin from root	Conf. Scam.; Pil. Scam. Co.; Pulv. Scam. Co.; Ext. Col. Co.; Pil. Col. Co.; Pil. Col. et Hyoscyam.
Gum-resin obtained from living root	Mist. Scammonii; Resina Scammoniæ.
Sliced and dried bulb	Acetum, Oxymel, Pilula Co., Syrupus, Tinctura Scillæ; Pil. Ipecac. c. Scillâ.
Fresh and dried tops	Decoct. Scoparii (from dried); Succus Scoparii (from fresh).
Dried root	Infusum and Tinctura Senegæ.
Dried leaflets	Confectio, Infusum, Mistura Co., Syrupus, and Tinctura Sennæ; Pulvis Glycyrrhizæ Compositus.
Dried leaflets	May be used in the place of Alexandrian Senna.

B. P. Name.	Obtained from.	Natural Order.	Geographical Source.
Serpentariæ Rhizoma	Aristolochia Serpentaria or Aristolochia reticulata	Aristolochiaceæ	Southern parts of North America . . . . .
Sevum Præparatum	Ovis Aries	Ruminantia . .	Domesticated everywhere . .
Sinapis	Brassica { alba . . . nigra . . . }	Cruciferæ . . .	Indigenous . . . .
Staphisagriæ Semina	Delphinium Staphisagria .	Ranunculaceæ .	South of Europe . . . . .
Stramonii Semina .	Datura Stramonium. . .	Atropaceæ . . .	Britain. . . . .
Strychnina . . .	Nux Vomica	Loganiaceæ . .	East Indies . . . .
Styrax præparatus .	Liquidambar orientalis .	Liquidambaraceæ	South-west of Asia Minor . .
Sumbul Radix . .	Ferula Sumbul	Umbelliferæ . .	Russia and India . . . . .
Tabaci Folia . . .	Nicotiana Tabacum . . .	Atropaceæ . . .	America . . . .
Tamarindus . . .	Tamarindus Indica . . .	Leguminosæ . .	West Indies . . . .
Taraxaci Radix . .	Taraxacum officinale . .	Compositæ . . .	Britain . . . .
Terebinthina Canadensis . . .	Pinus balsamea	Coniferæ . . .	Canada . . . .
Terebinthinæ Oleum	Pinus Australis, Pinus Tæda, & sometimes from P. Pinaster and P. Sylvestris . .	,,	United States of America . .
Theobromatis Oleum	Theobroma Cacao . . .	Sterculiaceæ . .	Central America . . . . .
Theriaca	Saccharum officinarum . .	Graminaceæ . .	West Indies and elsewhere . .
Thus Americanum .	Pinus { Tæda . . . Australis . . }	Coniferæ . . .	Southern States of North America. . . . . .
Thymol	Thymus vulgaris . . } Monarda punctata . } Carum Ajowan . . .	Labiatæ . . } Umbelliferæ . }	Largely produced in France .
Tragacantha . . .	Astragalus gummifer . .	Leguminosæ . .	Asia Minor . . . .
Uvæ.	Vitis vinifera	Vitaceæ. . . .	Spain . . . .
Uvæ Ursi Folia . .	Arctostaphylos Uva Ursi .	Ericaceæ . . .	Indigenous . . . .
Valerianæ Rhizoma.	Valeriana officinalis . . .	Valerianaceæ . .	Britain . . . .
Veratrina	Cevadilla	Melanthaceæ . .	Mexico . . . .
Veratri Viridis Rhizoma . . .	Veratrum viride	Melanthaceæ . .	United States and Canada .
Zingiber	Zingiber officinale . . .	Zingiberaceæ . .	West Indies and India . .

Parts used.	Preparations into which it enters.
Dried rhizome and rootlets . . .	Infusum and Tinctura Serpentariæ; Tinct. Cinchon. Co.
Internal fat of the abdomen . . .	Emplastrum Cantharidis, Unguentum Hydrargyri.
Seeds of both mixed	Cataplasma, and Charta Sinapis, Oleum Sinapis, from Black Mustard only.
Dried ripe seeds	Unguentum Staphisagriæ.
Dried ripe seeds	Extractum and Tinctura Stramonii.
The alkaloid	Liquor Strychninæ Hydrochloratis.
Balsam from the inner bark purified.	Tinctura Benzoini Composita.
Dried root	Tinctura Sumbul.
Dried leaves.	
Pulp of the fruit	Confectio Sennæ.
Fresh and dried roots	Decoctum, Extractum, Extractum Liquidum, Succus Taraxaci.
Turpentine from incised bark. . .	Charta Epispastica; Collodium Flexile.
Oil distilled from Turpentine . .	Confectio, Enema, Linimentum, Linimentum Aceticum, and Unguentum Terebinthinæ
Concrete oil from ground seeds . .	Some Suppositoria.
Uncrystallizable residue of the refining of sugar	Various Pill-masses and Tinct. Chloroformi et Morphinæ.
Concrete Turpentine	Emplastrum Picis.
Stearoptene of the oils	
Gummy exudation from the stem .	Mucilago, Glycerinum, Pulv. Tragac. Co.; Conf. Opii; Conf. Sulphuris; Pulv. Opii Co.
Ripe fruit	Tinct. Cardam. Co.; Tinct. Sennæ.
Dried leaves	Infusum Uvæ Ursi.
Dried rhizome and rootlets . . .	Infusum, Tinctura, Tinctura Valerianæ Ammoniata.
The alkaloid from Cevadilla . . .	Unguentum Veratrinæ.
Dried rhizome and rootlets . . .	Tinctura Veratri Viridis.
Scraped and dried rhizome . . .	Syrupus, Tinctura, Tinctura Zingiberis Fortior. It is also used in some powders and other preparations.

ABBREVIATIONS.

A.J.P. = American Journal of Pharmacy.
B.M.J. = British Medical Journal.
B.P. = British Pharmacopœia, 1885, and Reprint, Nov., 1888.
B.P.C. = British Pharmaceutical Conference (Unofficial Formulary).
B.S.H. = Pharmacopœia of British Hospital for Diseases of the Skin.
C.D. = Chemist and Druggist.
L. = Lancet.
L.M.R. = London Medical Recorder.
L.O.H. = Pharmacopœia of the Royal London Ophthalmic Hospital (Moorfields).
M.A. = Medical Annual.
M.T. = Medical Times and Gazette.
M.P. = Medical Press and Circular.
P.J. = Pharmaceutical Journal.
P.L. = Pharmacopœia Londonensis, 1851.
P.R. = Pharmaceutical Record (New York).
Pr. = Practitioner.
R. = Ringer's Handbook of Therapeutics.
T.G. = Therapeutic Gazette (Philadelphia).
T.H. = Pharmacopœia of the Hospital for Diseases of the Throat (Golden Square).
U.S.N.F. = National Formulary of the American Pharmaceutical Association.
Y.B.P. = Year Book of Pharmacy.

Example: *B.M.J.* '84, i. 56, refers to British Medical Journal, 1884, Volume I., page 56.

The British, published in 1885, is in this work compared with the latest editions of the foreign Pharmacopœias, which are as follows:—

Austrian	published in	1889
Belgian	,, ,,	1885
Danish	,, ,,	1869
Dutch	,, ,,	1889
French	,, ,,	1884
German	,, ,,	1882
Hungarian . . .	,, ,,	1888
Norwegian . . .	,, ,,	1879
Portuguese . . .	,, ,,	1876
Russian	,, ,,	1880
Spanish	,, ,,	1884
Swedish	,, ,,	1879
Swiss	,, ,,	1872 (With additions 1876)
United States . . .	,, ,,	1882

and are thus abbreviated—Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Norw., Port., Russ., Span., Swed., Swiss, U.S.

MATERIA MEDICA,

WITH

COMPOUNDS AND PREPARATIONS.

Not Official.

ABRUS PRECATORIUS.

JEQUIRITY.

ROOT.—It is used in many hot countries for the same purpose as liquorice root, hence it is called Indian or Jamaica liquorice. The **root** and an **extract** prepared from it are official in the Pharmacopœia of India.

SEEDS.—An infusion has been introduced in the treatment of granular lids; it sets up a purulent ophthalmia of a croupous nature, varying in intensity with the strength and frequency of the applications. A very strong **infusion,** or rather paste, has been also found useful by Dr. Shoemaker in the treatment of affections of the skin, dependent upon exuberant granulations and proliferating cell growths, though only to be used under careful supervision and with due caution. (*Med. Bulletin,* Nov. 1884.) 1 to 3 per cent. **infusion** has been used in granular lids (*L.* '85, ii. 733); also in cases of abscess of the cornea (*L.M.R.* '86, 126, and *T.G.* '87, 640); 1 per cent. **infusion** in granular metritis (*L.M.R.* '86, 541).

Considerable difference of opinion exists as to the nature of the determining cause of the inflammation, but it seems probable that it is affected, if not destroyed, by heat.

Preparations.

INFUSUM ABRI (*L.O.H.*).—Pour 12½ fl. drms. of Water at 120° F. on 1 drm. of powdered Jequirity seeds, allow it to stand till cold, then decant.

INFUSUM ABRI (Dr. Moyne's).—Jequirity seeds in powder, 3·2; macerate in cold Water, 500, for 24 hours, and then add hot Water, 500; when cold, filter.

PASTA ABRI (Dr. Shoemaker's).—Decorticated seeds carefully freed from testa, 200; macerate in Water for 24 hours, reduce in a mortar to a smooth paste, and add sufficient Water to make 800.

To be applied with a camel's hair pencil.

Not Official.

ABSINTHIUM.

WORMWOOD.

The leaves and flowering tops of *Artemisia absinthium.* It possesses an aromatic odour and a very bitter taste. It contains a crystallisable bitter principle, Absinthin, slightly soluble in Water, readily in Alcohol, Chloroform and Ether.

(Austr., Belg., Dan., Dutch. Fr., Ger., Hung., Norw., Port. (Losna), Russ., Span. (Ajenjo), Swed., Swiss, and U.S.)

Medicinal Properties.—Tonic and Febrifuge. Specially used on the Continent by drunkards; its excessive use causes symptoms known as Absinthism.

Preparation.

TINCTURA ABSINTHII.—Wormwood, 1; Proof Spirit to make 10.

Dose.—1 to 4 drms.

(Belg., Dan., Fr., Ger., Norw., Port., Russ., Span., Swed., and Swiss, 1 in 5; Austr. and Hung. (compound), 1 in 10; Fr. (compound), 1 in 40; U.S., used in Vinum Aromaticum, 1 in 100: all by weight.)

ACACIÆ GUMMI.

GUM ACACIA.

A gummy exudation from the stem and branches of Acacia Senegal, and from other species of Acacia, collected chiefly in Kordofan in Africa, and imported from Alexandria.

In spheroidal tears, opaque from numerous cracks, nearly white.

We have taken the sp. g. of several samples of good white Gum Acacia, and find that it varies very little from 1·5.

It consists chiefly of Calcium Arabate, containing also Potassium and Magnesium; it contains 12 to 17 per cent. of Water, and yields 2·7 to 4 per cent. of Ash.

Its aqueous solution reddens blue litmus paper.

Solubility.—1 in 1 of Water. Insoluble in Alcohol, Ether, and Oils.

Test.—Powder of Gum should be white and free from Starch, and therefore a solution made with boiling Water and cooled should not be rendered blue or violet by an aqueous solution of Iodine. The presence of Saccharine substances can be detected, after inversion, by Fehling's solution.

Adulteration with dextrin can be detected by the use of Ferric Chloride and Alcohol. For process see *Allen's Commercial Organic Analysis.*

(Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Norw., Port., Russ., Span., Swed., Swiss, and U.S.)

Medicinal Properties.—Emollient, nutritive. Allowed to dissolve slowly in the mouth, allays tickling cough. For a demulcent drink, 1 of Mucilage, 1 of Syrup, and 20 of Water.

Dose.—*Ad libitum.*

Used in the preparation of Mistura Cretæ, Mistura Guaiaci, Pulvis Amygdalæ Compositus, Pulvis Tragacanthæ Compositus, and all Trochisci.

Preparations.

MUCILAGO ACACIÆ. Faintly coloured, slightly opaque.

Gum Acacia, in small pieces, 40; Distilled Water, 60: put these into a covered jar and stir frequently until the gum is dissolved. =(1 and 1½).

The product measures only 87, therefore 4 of Gum are contained in 8¾ measures of Mucilage. Sp. g. 1·160 to 1·170.

Mucilage keeps well if made cold, then poured into small bottles quite full, and stored in a cool place.

Dose.—1 to 4 drms.

(Dutch and Port., 2 and 3; Fr., 1 and 1; Austr., Dan., Ger., Hung., Norw., Russ., Swed., and Swiss, 1 and 2; Span., 1 and 3; Belg., 1 and 4—also M. Spissa, 1 and 2—and M. Levis, 1 and 9; U.S. 34 and 66.)

Incompatibles.—Alcohol and Sulphuric Acid; Borax, Persalts of Iron, and Subacetate of Lead render it gelatinous. It is not affected by neutral Acetate of Lead.

Squibb has found that solution of the Gum is facilitated by using it in the form of a coarse powder, not larger than No. 50, nor smaller than No. 80 sieve, free from fine powder.—Squibb's *Ephemeris*, March, 1883, p. 252.

German and United States Pharmacopœias direct that the Gum should be washed with cold Water, before being dissolved.

Mucilage, if kept carelessly only a week in hot weather, becomes sour, and its emulsive property is impaired: if made with hot Water the change is more rapid.

The substitution of Glycerine for half the Water has been suggested; it makes a clearer solution, and keeps about as well, but the Gum takes much longer to dissolve.

B.P. Mucilage of Acacia keeps better than the weaker preparation of U.S.P., even when Cinnamic Acid has been added to the latter.

It is much used in cough linctuses and lozenges, and frequently to render oils, &c., emulsive with aqueous fluids; 3 drms. are required for 1 oz. of oils or resinous tinctures, 10 drms. for 1 oz. of Copaiba. The Mucilage should be put into a mortar and the Oil added by degrees, with constant trituration. Used to keep Bismuth and other powders suspended, but Tragacanth answers better. It is sometimes used to make powders into pills, but they become hard after being kept a short time, therefore Glycerine, Glycerine and Mucilage equal parts, Glycerine of Tragacanth, Glucose, &c., are to be preferred.

It is impossible to make a nice emulsion with some of the oils (the Oil of Male Fern for instance) unless the Mucilage be good; if fresh Mucilage is not at hand, half the quantity of the powder of Acacia can be used; first rub the powder with the Oil, then add Water equal to double the weight of the powder, and rub till an emulsion is formed; now add by degrees any quantity of aqueous liquid ordered in the prescription.

Not Official.

POTION GOMMEUSE (Fr.).—Powdered Gum Arabic, 1; Simple Syrup, 3; Orange Flower Water, 1; Water, 10.

SIROP DE GOMME (Fr.).—Gum, 10; Sugar, 67; Water, 43; dissolve the Gum in cold Water, then the Sugar by the aid of a water-bath; and strain.

SYRUPUS ACACIÆ (U.S.).—Mucilage of Acacia, 1; Syrup, 3. Mix when required, as it does not keep well.

UNNA'S GUM PASTES.—A mixture of equal parts of Mucilage of Acacia and Glycerine, with which are incorporated various medicaments such as Oxide of Zinc and Oxide of Mercury.

ACETANILIDE.

See ANTIFEBRIN.

Not Official.

ACETOPHENONE.

Syn.—HYPNONE; METHYLPHENYLACETONE; METHYL-BENZOYL.

$C_6H_5, CO.CH_3$

Prepared by acting on Zinc Methyl with Chloride of Benzoyl, or by distilling a mixture of Benzoate and Acetate of Calcium. A colourless, very refrangent liquid with a persistent odour of Essential Oil of Almonds. A commercial sample crystallised at about 4° C. (39·2° F.), the temperature rising at the same time to 12° C. The melting point of the Crystals was 14° C. (57·2° F.); sp. g. 1·027; commenced to boil at 153° C., and rose to 200° C.

Solubility.—Insoluble in Water; soluble 1 in 90 of Glycerine; mixes in all proportions with Rectified Spirit, Proof Spirit, Ether, Chloroform, and Olive Oil.

Medicinal Properties.—Hypnotic; when mixed with Chloroform increases its action, but does not appear to act where there is pain; has yielded good results as an **inhalation** in Phthisis, 5 drops every four hours.—*L.M.R.* '87, 545; *T.G.* '86, 648; also '87, 253; *P.J.* xvi. 582.

Dose.—2 to 8 minims (increased) dissolved in ten times as much Oleum Amygdalæ.

Given in Capsules and in Syrup.

It should not be used hypodermically.

ACETUM.

VINEGAR.

An acid liquid of a brown colour and peculiar odour, prepared from malt and unmalted grain by the acetous fermentation; contains 5·41 per cent. real Acid, $HC_2H_3O_2$.

Tests.—Sp. g. 1·017 to 1·019. Ten minims of the Solution of Chloride of Barium (1 in 8) will precipitate all the Sulphuric Acid in an ounce of Vinegar, equal to $\frac{1}{1000}$ part, which by law is allowed to be added to it. 445·4 grains by weight (1 fluid ounce) require at least 402 grain-measures of the volumetric Solution of Soda for neutralization.* Sulphuretted Hydrogen causes no change in colour—indicating absence of metals.

(Austr., Belg., Ger., Hung., and Swiss, 6 per cent. Acetic Acid; Dan. and Swed., 4·7 p. c.; Port., 7—9 p. c.; Russ., 5 p. c.; Span., sp. g. 1·018—1·020: all are without Sulphuric Acid. Not in the others.)

Medicinal Properties.—Given to diminish profuse sweating in hectic cases. With Infusion of Sage it forms an astringent **gargle.** Diluted 1 in 10 of Water is used also to sponge the surface of the skin in fevers, or with lint as a cooling **lotion** to bruises and sprains.

The most ready and safe antidote in cases of poisoning by alkalies.

A wineglassful of Vinegar has been given internally with good effect in post-partum hemorrhage.—*B.M.J.* '84, i. 56.

Dose.—1 drm. to 1 oz. diluted.

Incompatibles.—Ammonia, Lime, all the Alkalies, and Carbonates.

Used in making Empl. Saponis Fuscum.

ACETUM CANTHARIDIS.—*See* CANTHARIS.

ACETUM SCILLÆ.—*See* SCILLA.

ACIDUM ACETICUM.

ACETIC ACID. PURIFIED PYROLIGNEOUS ACID.

A colourless acid liquid, with pungent odour, prepared from wood by destructive distillation and subsequent purification, containing 33 per cent. of real Acid, $HC_2H_3O_2$, eq. 60.

Tests.—Sp. g. 1·044. 182 grains by weight require for neutralization 1000 grain-measures of the volumetric Solution of Soda. It leaves no residue when evaporated. It gives no precipitate with Sulphuretted Hydrogen, Chloride of Barium, or Nitrate of Silver—indicating absence of metals, Sulphuric and Hydrochloric Acids. If a fluid drachm of it mixed with half an ounce of Distilled Water and half a drachm of pure Hydrochloric Acid be put into a small flask with a few pieces of Granulated Zinc, and while the effervescence continues, a slip of bibulous paper wetted with Solution of Subacetate of Lead be suspended in the upper part of the flask above the liquid for about five minutes, the paper will not become discoloured—indicating absence of Sulphurous Acid.

When supersaturated with Solution of Potash it should not have a smoky odour or taste, indicating absence of empyreumatic substances.

A mixture of equal volumes of this Acid and of Water is of the same neutralizing power as the diluted mineral acids of the Pharmacopœia.

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* Phenol-phthalein is better than Litmus as an indicator for this and most organic acids.

(U.S., 36 per cent. Acid, sp. g. 1·048; Dan., Norw., Russ., and Swed., 29 p. c., sp. g. 1·040; Dutch. 30 p. c.; Port., Acido Acetico Hydratido, 38 p. c., sp. g. 1·050; Fr., 50 p. c., sp. g. 1·060; Belg. and Ger., 96 p. c., sp. g. 1·064; Span., 94–98 p. c., sp. g. 1·060—1·067; Acid. Acet. Dilut. Austr. and Swiss, 20·4 p. c.; Hung., 20 p. c.; and Ger., 30 p. c.)

Medicinal Properties.—A local stimulant. "A good application for ringworm on the body" (Ringer). As a **gargle** 15 minims to 1 ounce of Water. When diluted it can be used for the same purposes as Vinegar.

Used in the preparation of Acetum Cantharidis, Extractum Colchici Aceticum, Injectio Morphinæ Hypodermica, Liquor Ammonii Acetatis Fortior, Oxymel, Tinct. Ferri Acetatis and Vinum Ipecacuanhæ.

Preparation.

ACIDUM ACETICUM DILUTUM.

Acetic Acid, 1; Distilled Water, 7; mix. =(1 in 8).

Colourless, contains 4·27 per cent. of real Acid, $HC_2H_3O_2$, eq. 60.

Test.—Sp. g. 1·006. 440 grains by weight (1 fluid ounce) require for neutralization 313 grain-measures of the volumetric Solution of Soda.

Dose.—1 drm. to 1 oz. with Water.

(Austr. and Swiss, 20·4 per cent. Acetic Acid, sp. g. 1·028; Ger., 30 p. c., sp. g. 1·041; Hung., 20 p. c.; Belg., 9·6 p. c., sp. g. 1·014; Dutch, 6 p. c.; Port., A. A. Aquoso, 10 p. c., sp. g. 1·015; Russ., 4·9 p. c.; U.S., 6 p. c., sp. g. 1·0083; see also Acetum.)

Used to prepare Acetum Scillæ and Liquor Morphinæ Acetatis.

ACIDUM ACETICUM GLACIALE.

GLACIAL ACETIC ACID.

Contains nearly 99 per cent. of real Acetic Acid, $HC_2H_3O_2$, eq. 60.

It **dissolves** Camphor, Gum-resins, Resins, and Volatile Oils.

Tests.—Sp. g. 1·058, which is increased by adding 10 per cent. of Water; the sp. g. increases with the gradual addition of Water until 30 per cent. has been added, when it will have sp. g. 1·078, the further addition of Water again reduces it; when 100 per cent. (equal volumes) of Water have been added, it will be sp. g. 1·063. 60 grains by weight in an ounce of Water require for neutralization at least 990 grain-measures of the volumetric Solution of Soda. When diluted gives no precipitate with Chloride of Barium or Nitrate of Silver—indicating the absence of Sulphuric and Hydrochloric Acids. Tried by the test mentioned in Acetic Acid, should indicate absence of Sulphurous Acid. When supersaturated with Solution of Potash it should not have a smoky odour or taste—absence of empyreumatic substances.

Mix 1 c.c. of Acid with 5 c.c. distilled Water in a clean test tube, and then add one drop of decinormal solution of Permanganate of Potash; should not be sensibly changed in one hour. (Squibb.)

It is three times as strong as Acidum Aceticum, and nearly twenty-four times as strong as Acidum Aceticum Dilutum. It is a colourless liquid, with pungent acetous odour; it crystallises when cooled, and remains crystalline until the temperature rises to above 60° F. (15·5° C.).

(Austr. and Hung., A. A. Concentratum, Swiss, A. A. Crystallisatum, Belg. and Ger., Acidum Aceticum, 96 per cent., sp. g. 1·064; Russ., A. A. Concentratum, 98 p. c.; Span., Acido Acetico, 94--98 p. c., sp. g. 1·060—1·067; U.S., sp. g. 1·056—1·058, not less than 99 p. c.: Fr., Acide Acétique Crystallisable, Port., A. A. Glacial, and Swed., A. A. Concentratum, nearly 100 p. c.: not in the others.)

Medicinal Properties.—Escharotic; used for corns and warts; it speedily vesicates, and thus is useful in cases where Cantharides may do harm by being absorbed, but it causes much pain, and if applied incautiously may produce a most troublesome sore. When scented, is employed to fill vinaigrettes containing sponge or fragments of Sulphate of Potassium.

Used in the preparation of Acetum Cantharidis, Linimentum Terebinthinæ Aceticum, Liquor Ferri Acetatis Fortior, and Mistura Creasoti.

Not Official.

ACIDUM ACETICUM AROMATICUM (Belg. and Russ.).—Glacial Acetic Acid, 72; Oil of Cloves, 9; do. Lavender, 6; do. Orange, 6; do. Bergamot, 3; do. Thyme, 3; do. Cinnamon, 1; all by weight; mix and filter.

ACETUM AROMATICUM (Ger.).—Oils of Lavender, Peppermint, Rosemary, Juniper, and Cinnamon, of each 1; Oil of Lemon, 2; Oil of Cloves, 2; Spirit, 300; Diluted Acetic Acid, 450; Water, 1200; digest some days and filter.

VINAIGRE ANGLAIS (Fr.).—Glacial Acetic Acid, 500; Camphor, 50; Oil of Cinnamon, 1; Oil of Cloves, 1; Oil of Lavender, ½; mix.

VINAIGRE DES QUATRE VOLEURS (Fr.).—Tops of the Greater and Lesser Wormwood, Rosemary, Sage, Peppermint, Rue, and Lavender Flowers, of each 15; Calamus Root, Cinnamon, Cloves, Nutmeg, and Garlic, of each 2; Camphor, 4; Glacial Acetic Acid, 15; Strong White Vinegar, 1000; dissolve the Camphor in the Glacial Acid; macerate the other ingredients in the Vinegar for ten days; press and mix.

VAPOR ACIDI ACETICI (*Throat Hosp.*).—Glacial Acetic Acid and Acetic Acid, equal parts; mix. Two teaspoonfuls in a pint of water at 140° F. for each inhalation. Sedative; used for inflammatory sore throat of scarlet fever.

ACIDUM TRICHLORACETICUM (Swiss).—A substitution product from Acetic Acid, but it is most readily prepared by acting on Chloral Hydrate with Nitric Acid in sunlight. Colourless, deliquescent Crystals, which fuse at 51° C., and boil at 195° C.

Readily soluble in Water and Rectified Spirit.

It is a powerful antiseptic. 1 or 2 p. c. solutions have been used as a dressing for wounds. Internally, in dilute solution, 2 to 5 grains for adults, ½ to 1 grain for children in gastric catarrh and summer diarrhœa.—*L.M.R.* '83, 285; *T.G.* '85, 63.

ACIDUM ARSENIOSUM.

ARSENIOUS ACID.

Syn.—Arsenious Anhydride; White Arsenic.

As_2O_3, eq. 198.

A heavy white powder, or stratified opaque masses, obtained by roasting Arsenical Ores, and purified by sublimation.

Solubility.—1 in 100 of cold Water; 1 in 20 of boiling Water; 1 in 500 of Rectified Spirit; 1 in 6 of Hydrochloric Acid; 1 in 8 of Glycerine; 1 in 11 of Solution of Potash; 1 in 40 of saturated Solution of Carbonate of Sodium.

Tests.—Entirely volatilized at a temperature not exceeding 400° F.;

sublimes in octahedral crystals. 4 grains of it, dissolved in boiling Water with about 20 grains of Bicarbonate of Sodium, discharge the colour of 808 grain-measures of the volumetric Solution of Iodine; the Arsenite of Sodium is converted into Arseniate, and the Iodine into Iodide of Sodium. An aqueous solution gives a canary-yellow precipitate with Ammonio-nitrate of silver, and a green precipitate with Ammonio-sulphate of Copper; both these precipitates are soluble in Ammonia, or Nitric Acid.

(Belg., Swiss, and U.S., A. Arseniosum; Austr., Dan., Dutch, Ger., Hung., Norw., Russ., and Swed., A. Arsenicosum; Fr., Acide Arsenieux; Port., Acido Arsenioso; Span., Arsenico Blanco.)

Medicinal Properties.—A nerve tonic. It is given in eczema, in chronic cutaneous diseases, and in chronic rheumatism of the joints. Antiperiodic in agues and neuralgic affections. Best given immediately after meals. Externally is a powerful caustic, and requires great care, as there is danger of absorption; but this can be prevented by using "sufficient quantity to produce active inflammation" (Ringer). Given in pernicious anæmia with good results (*L.* '85, i. 653, and *B.M.J.* '88, ii. 982); also in various glandular affections (*L.M.R.* '81, 98, 103; also *B.M.J.* '85, ii. 598, and *L.* '87, i. 679); in paroxysmal sneezing (*B.M.J.* '87, ii. 921); in chorea and epilepsy.

Dose.—$\frac{1}{60}$ to $\frac{1}{12}$ of a grain in solution or well mixed with Sugar of Milk in a pill. Ph. Ger. maximum single dose, ·005 gramme (=$\frac{1}{13}$ grain), maximum daily dose, ·02 gramme (=$\frac{2}{7}$ grain).

One of the symptoms of injurious effects from the continued use of Arsenic is œdema of the eyelids.

Incompatibles.—Salts of Iron, Magnesia, Lime Water, and astringent matters.

Antidotes.—The freshly prepared moist Peroxide of Iron, and Calcined Magnesia; Dialysed Iron; Mucilaginous drinks, Carron Oil, Stomach pump, Emetics, Ammonia, artificial respiration, cold affusion.

Antidotum Arsenici, Ph. Ger. (Belg., Dan., Dutch, Hung., Russ., Swed., and Swiss, similar). Calcined Magnesia 15, in 250 of Water; 100 of Solution of Persulphate of Iron, sp. g. 1·430, in 250 of Water.

These two mixtures will keep separately, and may be mixed at the instant they are required to be administered.

Preparations.

LIQUOR ARSENICALIS (Fowleri). *Syn.* LIQ. POTASSÆ ARSENITIS.

Arsenious Acid, 87 grs.; Carbonate of Potassium, 87 grs.; Compound Tincture of Lavender, 5 fl. drms.; Distilled Water, 20 oz.: boil till dissolved, when cool add the tincture, and make up with Distilled Water to 20 oz. =(1 grain of Arsenic in 110 minims).

This preparation has been **altered** so as to make it contain 1 per cent. of Arsenious Acid, that is one grain in 100 grain-measures of solution.

A reddish liquid alkaline to test paper, sp. g. 1·010.

Test.—One fluid ounce (442 grains by weight), boiled for five minutes with 10 grains of Bicarbonate of Sodium, and when cold diluted with 6 fluid ounces of Water, to which a solution of Starch has been added, does not give with the volumetric solution of Iodine a permanent blue colour until 875 grain-measures have been added.

Dose.—2 to 8 minims twice or thrice a day in water with meals.

(Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Norw., Port., Russ., Swed., Swiss, and U.S., 1 Arsenious Acid in 100; Span., 1 in 90.)

LIQUOR ARSENICI HYDROCHLORICUS.

Arsenious Acid, 87 grs.; Hydrochloric Acid, 2 fl. drms.; Distilled Water, 20 oz.: boil the two Acids with 4 oz. of the Water until a solution is effected, then add sufficient Distilled Water to make 20 oz.

Same strength as the Liquor Arsenicalis.
=(1 grain of Arsenic in 110 minims).

The strength of this preparation is also **altered** to 1 per cent.

A colourless liquid, acid to test paper, sp. g. 1·010.

Test.—Same as above, but using 20 grains instead of 10 grains of Bicarbonate of Sodium.

Dose.—2 to 8 minims.

(U.S. 1 of Arsenious Acid in 100.)

LIQUOR ARSENII ET HYDRARGYRI IODIDI.—*See* ARSENII IODIDUM.

ARSENIAS FERRI.—Dose, $\frac{1}{16}$ gr. *See* FERRI ARSENIAS.

ARSENIAS SODII.—*See* SODII ARSENIAS.

ARSENIATIS SODII LIQUOR. } *See* SODII ARSENIATIS
1 grain in 109 minims. **Dose,** 5 to 10 minims. } LIQUOR.

Not Official.

LIQUOR AMMONII ARSENITIS is made of the same strength as Liquor Arsenicalis; Carbonate of Ammonia being substituted for Carbonate of Potassium.

PILULA ASIATICA.—Arsenious Acid, $\frac{1}{12}$ grain; black Pepper, $\frac{1}{2}$ grain; Extract of Gentian, 1 grain, for one pill.

Used as a specific in various chronic skin eruptions.

SOLUTIO SOLVENTIS MINERALIS of Dr. De Valangin (the Liquor Arsenici Chloridi of the London Pharmacopœia) contains 30 grains of Arsenic dissolved by 90 minims of Hydrochloric Acid in 20 ounces of Water; is about one-third of the strength of the British Pharmacopœia. **Dose.**—3 minims three times a day, increasing to 10 minims for chorea.

ARSENICAL PASTE for Dentists.—Arsenious Acid, 2; Sulphate of Morphine, 1; Creasote to make a stiff paste. A quantity of the size of a pin's head is ample for one application. It should be spread on cotton-wool and placed in the tooth. It will thus destroy the sensibility of a carious tooth, and in a few hours the tooth is ready for stopping. Cocaine if applied before the arsenical paste prevents the pain.

ARSENICAL PASTE (Frères Come's), for cancer, applied after the surface has been laid bare by the application of caustic potash. Arsenic, 1; Charcoal, 1; Red Sulphuret of Mercury, 4; Water, *q. s.*

ARSENICAL CAUSTIC POWDERS each contain from $\frac{1}{16}$ gr. to $\frac{1}{8}$ gr. of Arsenious Acid to 1 gr. of Calomel, Vermilion, or Sulphuret of Antimony, or of any combination of them.

ACIDUM BENZOICUM.

BENZOIC ACID.

Syn.—Flowers of Benzoin; Hydrate of Benzoyl.

$HC_7H_5O_2$, eq. 122.

In light, feathery, flexible, crystalline, silky plates and needles, colourless, or nearly so, having an aromatic odour resembling that of Benzoin; obtained from Benzoin by sublimation.

Benzoic Acid should be prepared from Gum Benzoin, but it is also made from Toluol.

Solubility.—1 in 390 of Water; 1 in 12 of boiling Water; 1 in $2\frac{3}{4}$ of Rectified Spirit; 1 in $2\frac{3}{4}$ of Ether; nearly 1 in 6 of Chloroform; 1 in

12 of Benzol; 1 in 30 of Glycerine. Soluble also in Caustic Alkalies and in hot Milk of Lime, forming Benzoates. Borax increases its solubility in Water; 1 of Borax and 1 of Acid are soluble in 100 of Water; Phosphate of Sodium also aids its solution.

The solubility of Benzoic Acid in Water is variously given as:—U.S., 1 in 500; Ger., 1 in 372; Hung., 1 in 350; Eagle, 1 in 250; Martindale, 1 in 220. We find that Benzoic Acid sublimed from Benzoin does not dissolve 1 in 370 of Water at 60° F. in 3 days, but completely dissolves 1 in 390.

Test.—When heated it sublimes, leaving only a slight residue.

(Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Norw., Port., Russ., Span., Swed., Swiss, and U.S.)

Medicinal Properties.—Stimulant, expectorant, diuretic; said to cure nocturnal incontinence of urine; given in 5 or 6 grain doses for inflammation of the bladder, frequently at first, afterwards at longer intervals and in diminished doses.

Is a valuable remedy in acute rheumatism when Salicylic Acid or its Sodium Salt either cannot be borne or fails to produce any effect. —*L.M.R.* '80, 94.

It has been used with advantage in the treatment of gout.—*B.M.J.* '86, i. 734.

As a **lotion** one grain in an ounce of water, or a stronger solution in Spirit to be diluted as required.

Dr. Alexander Ure pointed out that this Acid changed Uric into Hippuric Acid.

It possesses antiseptic properties; a saturated solution in water delays decomposition of animal fluids; it is also useful in preventing fats from becoming rancid.

Stimulates the liver, but its action is less rapid and less powerful than that of its salts. —Dr. Rutherford.

Dose.—5 to 15 grs.: best given wrapped in wafer-paper, or in Cachets Limousin, or in **pills** made up with a mixture of equal parts Treacle and liquid Glucose.

Used in the preparation of Ammonii Benzoas; Tinct. Camphoræ Composita, 2 grs. in each ounce; and Tinct. Opii Ammoniata, 9 grs. in each ounce.

Preparation.

TROCHISCI ACIDI BENZOICI.

Benzoic Acid, made into a lozenge with Sugar and Gum Acacia. Each lozenge contains half a grain of Benzoic Acid.

Dose.—1 to 5 lozenges.

These lozenges are also made with Red Currant Paste.—*T.H.*

Not Official.

VAPOR ACIDI BENZOICI (*T.H.*).—Benzoic Acid, 3 grs.; Kaolin, 12 grs, rub together and add Water, $\frac{1}{2}$ oz; Tincture of Tolu, 18 mins.; shake and make up with Water to 1 oz.

Extremely serviceable in acute affections of the air passages.

BENZOIC GAUZE.—Contains 4 per cent. of Benzoic Acid.

ACIDUM BORICUM.

BORIC ACID.

Syn.—Boracic Acid.

H_3BO_3, eq. 62.

Is obtained by the action of Sulphuric Acid on Borax; also by the purification of native Boric Acid.

Solubility.—1 in 25 of cold Water; 1 in 3 of boiling Water; 1 in 4 of Glycerine; 1 in 18 of Rectified Spirit.

Its solution turns blue litmus red and turmeric paper brown, which latter is unchanged in the presence of Hydrochloric Acid. The Alcoholic solution burns with a flame tinged with green.

Tests.—Its aqueous solution should not give more than a faint opalescence with Chloride of Barium (Sulphates), Nitrate of Silver (Chlorides), or Oxalate of Ammonium (Calcium); nor yield any precipitate with Sulphide of Ammonium (metals), nor give a strong persistent yellow tinge to a spirit or air-gas flame (Sodium).

(Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Port., Russ., Span., Swed., Swiss, and U.S.; not in Norw.)

Medicinal Properties.—Antiseptic; it is used as a **dressing** for granulating and suppurating surfaces in general; as an **eye-wash**, 2 to 5 grains in an ounce of Water; as a **mouth-wash**, 10 to 15 grains to an ounce of Water; as a **paint** for the throat, 1 in 5 of Glycerine; as a **pessary**, 10 grains with Gelatine Mass or Oil of Theobroma.

Dose.—5 to 30 grains.

Preparation.

UNGUENTUM ACIDI BORICI.

Boric Acid in fine powder, 1; Soft Paraffin, 4; Hard Paraffin, 2; melt the Paraffins together, and sift the Boric Acid over the surface of the liquid, then stir together until cold. =(1 in 7).

(Dutch, 1 in 10; not in the other Pharmacopœias.)

Not Official.

LINTEUM ACIDI BORICI.—Lint dipped in a hot saturated aqueous solution of Boric Acid and then dried. Used as an antiseptic dressing for wounds and ulcers.

Boric Gauze, 25—40 p. c.; **Boric Wool,** 40 p. c.

PASTILLUS ACIDI BORICI (*T.H.*).—2 grains in each pastil.

BORO-GLYCERIDE.—A patent preparation for preserving different kinds of food. It is made by heating together Boric Acid and Glycerine.

A **solution,** 1 in 20 of Water, has been used as an antiseptic in operative surgery.

LIQUOR MAGNESII BORATIS.—*Light* Carbonate of Magnesium, 4; Boric Acid, 27; Water, 128; boil and filter. Dissolves almost completely, but crystallises out within 48 hours. Half the quantity of Light Calcined Magnesia can be used in the place of the Carbonate.

Has been recommended in diphtheria.—*B.M.J.* '87, ii. 526.

ACIDUM CARBOLICUM.

CARBOLIC ACID.

Syn.—PHENIC ACID; PHENOL; PHENIC ALCOHOL.

HC_6H_5O, eq. 94.

Carbolic Acid, or Phenol, is prepared in a crude state by treating certain oils, heavier than water, obtained in the distillation of Coal Gas Tar, with a dilute solution of caustic Soda, subsequent separation of the crude Carbolic Acid from the alkaline solution by the addition thereto of a mineral Acid (usually Sulphuric). The crude Carbolic Acid thus obtained is submitted to fractional distillation and crystallisation, with other purification processes, having for their object the entire removal of the last traces of Cresylic and other Tar Acids and Bases, Sulphur compounds, &c.

Colourless, or having a very slight reddish or brownish tinge. Sp. g. 1·060—1·066 at the melting point, which should not be lower than 91·5° F. (33° C.). Boiling point should not be higher than 371° F. (188·3° C.). 100 parts should dissolve 30 to 40 of Water, and are dissolved by 1800 to 1200 of Water. The aqueous solution should be clear and colourless, or nearly so; any insoluble brown matter separating as dark oily drops which should not have more than a faint tarry odour.—*British Pharmacopœia*, 1885.

We have examined several samples of Carbolic Acid, and not one melted below 95° F.; the majority melted above 100° F.

Pure Carbolic Acid, when freshly prepared, fuses at 108° F. (42·25° C.), and boils at 359·6° F. (182° C.): 100 parts dissolve in 1200 parts of Distilled Water at 60° F.; 100 parts will dissolve 29 parts of Water at 60° F.

Solubility.—1 in 13 of Water, and will not separate when more Water is added; 1 in 2 of Olive Oil; 3½ in 1 of Glycerine; 3 in 1 of Chloroform; 4 in 1 of Ether; 6 in 1 of Rectified Spirit; 2¼ in 1 of Benzol; 2½ in 1 of Bisulphide of Carbon; freely in Liquor Potassæ and Liquor Sodæ; freely in Volatile Oils.

Cresol enters very largely into the composition of the cheaper kinds of liquid Carbolic Acid used as a disinfecting fluid. It is said to be scarcely inferior to Carbolic Acid as a disinfectant, but more irritating when applied in lotions as a dressing to wounds.

Pure Carbolic Acid is supplied in three states—Glacial, Granular, Liquid—the last being made by mixing 9 of acid with 1 of water, and the following methods have been employed for testing this liquid:—

100 c.c. are put into a retort and distilled; the first 30 c.c. of the distillate are rejected, and the next 30 c.c. are examined for the melting point, which should not be lower than 105° F. (45·5° C.).

When a small quantity of this solution—say 2 fluid drachms, in a test tube clean and dry, and a thermometer dipping into the solution—is placed in cold water about the temperature of 45° F., and gently stirred, it becomes a mass of crystals, and it again becomes a clear solution when the temperature rises to 55° or 56° F. (13° C.).

When 1, 2, or 3 parts of melted Carbolic Acid are mixed with 1 of Water, the Acid separates on cooling in oily-like globules; but when 4, 5, 6, 7, 8, and even 9 of Acid to 1 of Water are mixed, the solution is perfect at ordinary temperatures; when, however, the temperature sinks to 40° F. or under, the 8 and the 9 will crystallize out again.

Tests.—The principal tests for the quality of Carbolic Acid are the odour, which is characteristic, the melting point, and the solubility in water. It coagulates Albumen; it does not redden Litmus, and does not affect a ray of polarised light; an aqueous solution gives a purple-blue colour with Solution of Ferric Chloride.

Melting Point (Centigrade) compared with foreign Pharmacopœias:

Austr. and Swed., 37°—40°; Belg., 41°; Brit., 33°; Dan., Port., and Span., 35°; Dutch, 39°—42°: Fr., 42°; Ger. and Hung., 35°—44°; Norw., 35°—42°; Russ., 40°—44°; Swiss, 33°—40°; U.S. 36°—42°.

Boiling Point (Centigrade) compared with foreign Pharmacopœias:

Austr., 182°—184°; Belg., 182°; Brit., under 188·3°; Dan., Dutch, Port., Swed., and Swiss, B.P. not given; Fr., 187°—188°; Ger., and Hung., 180°—184°; Norw., 180°; Russ. 182°; Span., 186°; U.S. 181°—186°.

Medicinal Properties.—Antiseptic, disinfectant, and local anæsthetic. Used in the utensils in sick rooms, also to wet a sheet hung outside the door of an infected chamber. Given as a sedative to check sickness and flatulence, to arrest diarrhœa, to remove intestinal worms; useful in some stages of phthisis; for psoriasis, 3 grs. in water three times a day are taken, the itching being greatly relieved. It has been used with advantage in hooping cough, internally as well as by inhalation, also as a disinfectant, sprinkled about the room. Used as a **gargle** (2 grs. to 1 oz.) for sore throat attended with fœtor of breath; if used with a **spray apparatus,** 3 grains in an ounce of Water; or for **inhalations,** 20 grs. dissolved in a pint of hot Water; as an **injection** (1 gr. to 1 oz. of Water) for the vagina or the bladder, to correct putrescence. Externally, used alone is a powerful caustic; as a **lotion** (15 to 30 grs. to 1 oz.) for foul or syphilitic ulcers, carbuncles, scabies, and lepra; (5 grs. to 1 oz.) excellent for eczema and eruptions attended with itching; or an **ointment** (30 to 60 grs. to 1 oz. of Benzoated Lard).

Carbolised Solution, 1 or 2 in 40 of Water; **Carbolised Oil**, 1 or 2 in 40 of Olive Oil; these are used for dressing lacerated wounds, scalds, and burns.

2 per cent. solutions have been used for **hypodermic injection.**

Carbolic Acid mixed with 5 to 10 per cent. of Glycerine injected for hydrocele.—*B.M.J.* '86, i. 1164, 1214.

Two per cent. spray for erysipelas.—*B.M.J.* '86, ii. 947.

Injection of a 5 p. c. solution into Anthrax.—*B.M.J.* 86, ii. 601; *L.* '87, ii. 1186.

One grain in 1 oz. of water every four hours for vomiting in pregnancy.—*L.* '89, i. 1121.

Dose.—1 to 3 grains in pill twice or three times a day.

Ph. Ger. maximum single dose, 1½ grains; maximum daily dose, 7½ grains.

We find that 12 grs. of Carbolic Acid makes a nice pill mass with 18 to 24 grs. of Liquorice Powder, depending upon the moisture in the Carbolic Acid; the whole or part of the Liquorice Powder may be replaced by Powdered Althæa Root, which answers equally well. If moisture is required to be added, Water is much better than Glycerine.

Antidotes.—Stomach-pump, Emetics. Diluted Sulphuric Acid, Albumen, Saccharated Solution of Lime; Olive or Castor Oil, strong Tea or Coffee, to counteract narcotism. Hypodermic injection of Sulphate of Atropine $\frac{1}{60}$ grain. Inhalations of Nitrite of Amyl. Case of Carbolic Acid poisoning by absorption treated successfully with 7½ grain doses of Camphor dissolved in Syrup every hour for 4 times.—*L.M.R.* '84, 217. Recovery after swallowing 3 ozs. Carbolic Acid, treated by hypodermic injection of $\frac{1}{10}$ grain Apomorphine, Olive Oil and Lime Water being given freely.—*B.M.J.* '88, i. 1336; Soap, *L.* '89, ii. 445.

Preparations.

ACIDUM CARBOLICUM LIQUEFACTUM.

Carbolic Acid liquefied by the addition of 10 per cent. of Water. A colourless or very slightly reddish or brownish liquid, having the taste, odour, &c., of Carbolic Acid.

Pure Liquid Carbolic Acid for years has been made 9 of Acid and 1 of Water; there seems to have been some confusion in B.P. between containing 10 p.c. and adding 10 p.c.

Sp. g. 1·064—1·067 at 60° F. (15·5° C.), boiling point gradually rising to a temperature not higher than 371° F. (188·3° C.).

It dissolves 18 to 26 per cent. of Water (at 60° F.), yielding a clear, or nearly clear, solution, from which any slight coloured impurity contained previously in the Acid separates.—*Brit. Pharm.*

Some tests which we have used are given under Acidum Carbolicum.

Austr., Ger., and Hung. Pharm., 100 Carbolic Acid; 10 Water; mix. A clear, colourless liquid, having the odour of Carbolic Acid, and forming a clear solution with 18 parts of Water. Dutch, Carbolic Acid, 100: Water, 20.

1 grm. dissolved in Water to measure one litre, of this solution not more than 51·6—52·6 c.c. should be required to combine with the Bromine set free from a mixture consisting of 50 c.c. each of the volumetric solutions of Bromate and Bromide of Potassium and 5 c.c. of Sulphuric Acid. The filtered liquid should no longer impart a blue colour to paper impregnated with volumetric Starch solution.—Ph. Ger.

GLYCERINUM ACIDI CARBOLICI.

Carbolic Acid, 1; Glycerine, 4: rub together till dissolved.

Sp. g. about 1·223. (By weight 1 in 6, by measure 1 in $4\frac{3}{4}$).

Dose.—5 to 10 minims in water.

(Port., 1 in 100; Span., 1 in 120; not in the others.)

Mixed with an equal bulk of water, may be applied to the tonsils when turgid, or when there is a diseased state of mucous surface producing fœtor of breath; also in diphtheria, assisted by a nutritious diet.

SUPPOSITORIA ACIDI CARBOLICI CUM SAPONE.

Carbolic Acid, 12 grs.; Curd Soap in powder, 180 grs.; Glycerine of Starch, 40 grs., or a sufficiency; to be divided into 12 conical suppositories.

Each suppository will contain 1 grain of Carbolic Acid.

The mass does not melt at 212° F.

(Not in the foreign Pharmacopœias.)

UNGUENTUM ACIDI CARBOLICI.

Carbolic Acid, 1; Soft Paraffin, 12; Hard Paraffin, 6; melt and stir together constantly until cold. =(1 in 19).

Crystals of Carbolic Acid can be seen in this after a little time.

(U.S., Carbolic Acid, 1; Ointment, 9. The latter is made with 4 parts of Lard and 1 of Yellow Wax; Swiss, 1 in 100; not in the others.)

Not Official.

LOTIO ACIDI CARBOLICI.—Carbolic Acid, 30 grs.; Water, 8 oz. This lotion applied to mosquito bites relieves the itching, pain, and swelling. If mixed with a little Glycerine and sponged over the face and hands before retiring to rest, the mosquitoes will not bite until the Acid be thoroughly evaporated by the heat of the skin.—*L.* '78, ii.

(Fr., Soluté d'Acide Phenique, and Port., Agua Phenica, 1 in 100, also 1 in 1000; Austr. and Ger., Aqua Carbolisata, 1 in 33; Hung., Aqua Carbolata, and Russ., Acidum Carbolicum Solutum, 1 in 100; Norw., Solutio Acidi Carbolici, and Swed., Solutio Acidi Phenylici, 1 in 50; Span., Agua Fenicada. 1 in 250.)

MISTURA ACIDI CARBOLICI (Rothe).—Pure Carbolic Acid, 12 mins.; Tincture of Iodine, 16 mins.; Tincture of Orange, 90 mins.; Syrup, 3 drms.; Water to 8 ozs. Recommended for use in Typhoid Fever; 1 oz. every four hours.—*L.* '88. i. 1244.

OIL FOR CATHETERS (Lund's Oil modified).—Pure Carbolic Acid or Phenol, 1; Castor Oil, 4; Almond Oil, 15.—*Univ. Coll. Hosp.*

TROCHISCI ACIDI CARBOLICI (*Throat Hosp.*)—1 gr. Carbolic Acid in each lozenge. One for a dose four or five times daily as an antiseptic and stimulant.

CARBOLIC ANTISEPTIC DRESSINGS.—Absorbent **Wool** and **Lint** containing 7 per cent. of Absolute Phenol; **Gauze,** $11\frac{1}{2}$ p. c.; **Tow,** 10 p. c.; **Ligatures,** 16 p. c. **Protective** Oiled Skin, 5 p. c.; Lac **Plasters,** $33\frac{1}{3}$ p. c.; Silk **Sutures,** 5 p. c.

ACIDUM CARBOLICUM CRUDUM.—Belg., Ger., Hung., Russ., Swed., Swiss, and U.S. A yellowish, yellowish brown, or reddish brown liquid, having a strongly empyreumatic and disagreeable odour.

SOLUTION DE PHENATE DE SOUDE.—(Fr. and Span.).—Phenol, 70; Solution of Caustic Soda (sp. g. 1·332), 100; Water to measure, 1000.)

LIQUOR NATRI CARBOLICI.—(Russ.).—Carbolic Acid, 5; Caustic Soda, 1; Distilled Water, 4. Sp. g. 1·060—1·065.)

PHENOL-CAMPHOR.—A colourless refractive liquid with an odour of Camphor. Soluble in Rectified Spirit, Ether, Chloroform, and oils. Insoluble in Glycerine and in Water. Equal parts Carbolic Acid and Camphor. Used as a local anæsthetic for toothache.—*T.G.* '85, 269; *L.* '89, ii. 867.

Carbolic Acid, 1, Camphor, 3, has been applied to false membranes in diphtheria, &c., either pure or mixed with an equal volume of Oil of Almonds.

It may be used at first every two hours, and afterwards three or four times a day. —*Bulletin de Thérapeutique*; also *B.M.J.* '88, i. 490.

Subcutaneous and intrapulmonary injections in Phthisis.—*L.M.R.* '88, 518.

It is not so caustic as Carbolic Acid.

Carbolic Acid and Camphor will form a liquid in any proportion between Camphor 3, Carbolic Acid 1, and Camphor 1, Carbolic Acid 3; but most authorities appear to use an excess of Camphor.

PHENOL IODATUM (*Hosp. Women*).—Iodine, 40 grs.; Liquefied Carbolic Acid, 1oz.

A fluid drachm diluted with 20 ozs. of Water is used as a vaginal douche in midwifery.—*L.* 88, ii. 862.

A similar preparation has been used in the dysentery of children.—*L.M.R.* 1885 107.

TRIBROMPHENOL.—White crystalline powder, with a slightly aromatic odour. A sample tested melted at 185° F. (85° C.).

Solubility.—1 in 2 of Rectified Spirit; 1 in 1 of Ether; 1 in 2 of Chloroform; almost insoluble in Water, but dissolves in Caustic Alkaline Solutions; 1 in 260 of Glycerine; 1 in 7½ of Olive Oil.

It possesses considerable antiseptic properties.

TRICHLORPHENOL.—White crystalline powder, with a pungent, somewhat tarry odour.

Solubility.—1 in 1 of Rectified Spirit; 2 in 1 of Ether; 1 in 1¼ of Chloroform; 1 in 1000 of Water; 1 in 9 of Glycerine; 1 in 3 of Olive Oil.

It forms Salts with Ammonium, Potassium, Magnesium, Calcium, Barium, Lead, and Silver.

It is stated to be an antiseptic and deodorant twenty-five times stronger than Carbolic Acid.

The **SULPHOCARBOLATES** have been given in zymotic diseases with benefit.

SULPHOCARBOLIC ACID is formed by the action of Sulphuric Acid upon Carbolic Acid. (Gmelin's "Chemistry," vol. xii. 1857. See also *M.P.* '70, i. 417.)

This has been revived under the name **ASEPTOL.**

SULPHOCARBOLATES OF AMMONIA, of **MAGNESIA**, of **POTASH**, and of **SODA**, all crystallise in tufts of acicular crystals more or less white; **SULPHOCARBOLATE OF COPPER**, in transparent light blue interlacing prisms; of **IRON**, in small brown micaceous crystals; of **ZINC**, in transparent rectangular colourless plates.

The Sulphocarbolates of Sodium and Zinc are now official. *See* SODII SULPHOCARBOLAS AND ZINCI SULPHOCARBOLAS.

ACIDUM CHROMICUM.

CHROMIC ACID OR CHROMIC ANHYDRIDE.

CrO_3, eq. 100·5.

This anhydride may be obtained by adding strong Sulphuric Acid to Bichromate of Potassium. It occurs in crimson-red needles, and is very deliquescent.

Solubility.—About 2 in 1 of Water; Alcohol decomposes it.

It is a powerful oxidising agent, and is liable to cause sudden combustion or *explosion* in contact with strong Alcohol, Glycerine, and some other oxidisable substances.

Test.—1 or 2 grains dissolved in 2 or 3 ounces of Water should afford only a faint opalescence with Chloride of Barium. This test is intended to limit the Sulphuric Acid to a trace, but it requires the addition of Hydrochloric Acid, as ordered in the U.S.P.

U.S. Pharm.—When 1 grm. Chromic Acid is dissolved in 100 c. c. of cold Water and mixed with 10 c. c. of Hydrochloric Acid, the further addition of 1 c. c. of test solution of Chloride of Barium should cause not more than a white turbidity.

Belg. Pharm.—An aqueous solution, boiled with Hydrochloric Acid and a small quantity of Alcohol, gives only a slight precipitate with Chloride of Barium. The object of the Alcohol is to reduce the Chromic Acid before the addition of the Chloride of Barium.

It is of great importance for its use as a caustic that Chromic Acid should be free from Sulphuric Acid.

(Austr., Belg., Fr., Ger., Hung., Port., Russ., Span., Swiss, and U.S. Not in Dan., Dutch, Norw., or Swed.)

Medicinal Properties.—It is a powerful caustic (1 in 1 of Water), and is used in the French hospitals by means of a glass rod, great care being taken to protect the adjacent parts by plaster or ointment, having moist lint ready to absorb any superfluous Acid; 100 grs. to 1 oz. Water is used to remove warty excrescences; 1 in 8 of Water may be applied to indolent ulcers, and 1 in 2000, or even 4000, is used to wash putrid sores, cancers, &c., so powerful are its antiseptic properties.

A warm concentrated solution rapidly dissolves all animal tissues.

Preparation.

LIQUOR ACIDI CHROMICI.

Chromic Acid, 1; Distilled Water, 3; dissolve. =(1 in 3½).

An orange red, inodorous, caustic, strongly acid liquid.

Sp. g. 1·185. Contains (by weight) 25 per cent. of Chromic Anhydride, CrO_3, or 29·5 per cent. of real Chromic Acid, H_2CrO_4.

(Belg., Fr., and Span.—Chromic Acid, 1; Distilled Water, 1; dissolve. Sp. g. 1·470.)

Not Official.

ACIDUM CHRYSOPHANICUM.

See CHRYSAROBINUM.

ACIDUM CITRICUM.

CITRIC ACID.

$H_3C_6H_5O_7.H_2O$, eq. 210.

A colourless crystalline acid obtained from Lemon Juice, or from the Juice of the fruit of *Citrus Bergamia*, the Limo.

Powdered Citric Acid is liable to contain particles of metallic Lead, which might be overlooked in testing for metals, but which dissolve during the preparation of Liquor Ammonii Citratis Fortior.

Solubility.—10 in 6 of Water; 1 in 2 of Glycerine; 10 in 15 of Rectified Spirit; 1 in 50 of Ether; almost insoluble in Benzol and Chloroform.

When heated to 212° F. (100° C.) it melts and gradually loses 8·6 per cent. of its weight.

Tests.—70 grains dissolved in Water require for neutralization 1000 grain-measures of the volumetric solution of Soda. It leaves no ash when burnt with free access of air. Its aqueous solution added to an excess of Lime Water, the mixture remains clear until boiled, when a white precipitate separates; it is not darkened by Sulphuretted Hydrogen, and gives no precipitate when added in excess to a solution of Acetate of Potassium, or Chloride of Barium—indicating absence of metals, Oxalic, Tartaric, and Sulphuric Acids.

Citric Acid, 1, dissolved in Distilled Water, 11, is a substitute for Lemon Juice, but does not keep long without spoiling.

17 grs. of Citric Acid neutralize about
24¼ grs. Bicarbonate of Potassium
20 ,, Carbonate of Potassium.
20½ ,, Bicarbonate of Sodium.
34¾ ,, Carbonate of Sodium.
14¼ ,, Carbonate of Ammonium.
11¾ ,, Carbonate of Magnesium.

(Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Norw., Port., Russ., Span., Swed., Swiss, and U.S.)

Medicinal Properties.—Refrigerant; allays thirst and irritation of the skin.

Prescribed in powders to be taken with each dose of an alkaline mixture during effervescence; or in solution, directing the quantity to be taken with the alkaline mixture.

Dose.—10 to 30 grs. in a wineglassful of Water.

Incompatibles.—Tartrate of Potash, Alkaline Carbonates, Acetates, and Sulphurets.

Contained in Ammonii Citratis Liquor Fortior, Bismuthi Citras, Bismuthi et Ammonii Citratis Liquor, Caffeinæ Citras, Ferri et Ammonii Citras, Ferri et Quininæ Citras, Lithii Citras, Potassii Citras, Sodii Citro-Tartras Effervescens, Succus Limonis, Syrupus Limonis, Vin. Quininæ, and in all the granular effervescing Citrates.

Not Official.

SYRUPUS ACIDI CITRICI.—Syn. Syrupus Citri.
Belg.—Citric Acid, 20; Syrup, 960; Water, 20; Spirit of Lemon, 1.
Fr.—Citric Acid, 10; Syrup, 980; Water, 10.
Hung.—Citric Acid 2; Sugar, 100; Water, 50.
Port.—Citric Acid, 1: Syrup of Lemons, 98; Water, 1.
Russ.—Citric Acid, 3; Sugar, 96: Water, 54; Elaeosacchari Citri, 1.
Swed.—Citric Acid, 1; Syrup, 19.
Swiss.—Citric Acid, 4; Syrup, 246; Oil of Lemon, 1.
U.S.—Citric Acid, 8; Syrup, 980; Water, 8; Spirit of Lemon, 4.

Not Official.

ACIDUM CRESYLICUM.

CRESYLIC ACID. CRESOL.

C_7H_8O eq. 108.

A colourless or slightly yellow liquid, with a tarry odour. Sp. g. 1·048. It boils, when pure, at 203° C., but a good commercial sample may boil 10° lower. It does not crystallise at the freezing-point of water. Its aqueous solution gives a *transient* blue colour with Solution of Perchloride of Iron.

Solubility.—1 in 80 of Water, and mixes in all proportions with Rectified Spirit, Ether, Chloroform, Glycerine and Olive Oil.

Medicinal Properties.—Used as an inhalation in whooping cough.

Slightly caustic, antiseptic: superior to Carbolic and much less poisonous.—*L.M.R.* '88, 447.

ACIDUM GALLICUM.

GALLIC ACID.

$H_3C_7H_3O_5.H_2O$, eq. 188.

Crystalline in acicular prisms or silky needles generally of a pale fawn colour. Prepared from Galls.

It also occurs as a cream-coloured amorphous powder.

Solubility.—1 in 100 of cold Water; 1 in 3 of boiling Water; 1 in 8 of Rectified Spirit; 1 in 50 of Ether; 1 in 5 of Glycerine, or with heat, 1 in 4; Gallic Acid, 1; Citrate of Potash, 1; dissolve in 30 of Water.

A solution in Rectified Spirit would be a convenient form for keeping it, as it will mix in any proportion with Water without separating; but it becomes brown by keeping.

The Crystalline Acid, when dried at 212° F. (100° C.), loses 9·5 per cent. of its weight.

Tests.—Its aqueous solution reddens Litmus, and gives a bluish-black precipitate with a persalt of Iron; it gives no precipitate with Solution of Gelatine (absence of Tannic Acid). It leaves no residue when burnt with free access of air (absence of earthy matters).

If 5 c. c. of a cold saturated aqueous Solution of Gallic Acid be treated in a watch-glass with *not more than* 2 drops of Solution of Potash a deep green colour will gradually be developed, which is changed to purple-red by acids.

(Belg., Fr., Port., Span. (Acido Agallico), Swiss and U.S.; not in the others.)

Medicinal Properties.—Astringent; given in all cases where the bleeding vessels must be reached through the circulation; it is considered by some to be more effective than Tannic Acid. It is given in pyrosis and the night sweats of phthisis, and is very effective in albuminuria.

Dose.—3 to 10 grs., with twice its weight of Sugar, to be taken three times a day in Water, in powders, or may be folded in wafer-paper; 10 to 60 grs. every five hours in albuminuria, when the urine is of low specific gravity. It is also given in **pills**: 30 grs. of Acid and 3 minims of Glycerine will make 6 pills.

Incompatibles.—Spiritus Ætheris Nitrosi, Metallic Salts.

Preparations.

GLYCERINUM ACIDI GALLICI.

Gallic Acid, 1; Glycerine, 4; rub together and dissolve by a gentle heat, not exceeding that of a water-bath. A slight separation may take place on prolonged keeping. =(By weight 1 in 6, by measure 1 in 4½).

Sp. g. about 1·3.

Dose.—10 to 60 minims.

(Not in the foreign Pharmacopœias.)

NOTE.—Professor Thorpe has shown that Gallic Acid, when heated with Glycerine to 190°—200° C. (374°—392° F), is rapidly converted into Pyrogallic Acid.

Not Official.

UNGUENTUM ACIDI GALLICI (U.S.)—Gallic Acid, 1; Benzoinated Lard, 9; rub together.

Not Official.

ACIDI HYDRIODICI SYRUPUS.

(U.S. MODIFIED.)

Hydriodic Acid (sp. g. 1·5), 160 mins.; Simple Syrup, 14 ozs.; Spirit of Orange, U.S., 1 fl. drm.; Water to make 15 ozs. Any free Iodine which may be present in the Acid will disappear in the Syrup when bottled and exposed to sunlight.

An acid syrupy liquid, colourless, or of a pale straw tint. Sp. g. 1·300.

Contains 1 per cent. of absolute Hydriodic Acid, HI.

Dose.—20 to 40 minims, well diluted.

Tests.—Gelatinised Starch added to the Syrup should not impart to it more than a faint bluish tint (absence of more than traces of free Iodine). Test Solution of Chloride of Barium added to a portion of the Syrup should produce no precipitation (absence of Sulphuric Acid). Test Solution of Nitrate of Silver produces a precipitate which is nearly insoluble in Water of Ammonia (absence of Hydrochloric Acid). 31·9 grammes of the Syrup should require for complete precipitation 25 c. c. of the volumetric Solution of Nitrate of Silver.—U. S. P.

ACIDUM HYDROBROMICUM DILUTUM.

DILUTED HYDROBROMIC ACID.

A colourless and odourless liquid, containing 10 per cent. by weight of gaseous or real Hydrobromic Acid, **HBr**, eq. 81.

The British Pharmacopœia recommends Bromine to be acted upon by Sulphuretted Hydrogen, then filtration and distillation.

Squibb's process is to pour diluted Sulphuric Acid into a strong solution of Bromide of Potassium, separate the liquid from the crystalline Sulphate of Potassium, and distil.

French Codex process is to mix diluted Sulphuric Acid with a strong solution of Bromide of Barium, filter from the Sulphate of Barium, and distil.

Dr. Fothergill gave the following formula (*B.M.J.* '76, ii. 42.):—

℥ x. ʒ vi. gr. xxviii. Bromide of Potassium dissolved in 2 pints of Water; ℥ xiii. ʒ i. gr. xxxvii. Tartaric Acid in 2 pints of Water; mix the solutions, and filter.

Dose.—30 to 60 minims in Water.

The objection to this last process is that it contains Acid Tartrate of Potassium, and therefore cannot be readily tested for strength either by specific gravity or volumetrically by Solution of Soda.

Tests.—Sp. g. 1·077. The addition of Nitrate of Silver solution causes a white precipitate, insoluble in Nitric Acid, and sparingly soluble in Solution of Ammonia. When mixed with Chlorine Water, Bromine is liberated. When volatilised by heat, it should leave little or no residue. It should not precipitate with Chloride of Barium (absence of Sulphuric Acid). 810 grains by weight require for neutralization 1000 grain-measures of the volumetric Solution of Soda.

B. P. It does not become coloured on keeping.

Most commercial samples become yellow.

(Fr. and U.S. 10 per cent., sp. g. 1·077; not in the others.)

Medicinal Properties.—Same as the Bromides. When large doses or continued use are indicated, it can be used to supplement or replace the Bromides. It is stated to be less likely to produce acne.

Dr. Fothergill stated that it prevents headache after taking Quinine or Iron, and may be given with Quinine (which it readily dissolves) for nervous exhaustion.

Dose.—(B.P.) 15 to 50 minims, but larger doses may be given, 2 to 4 fluid drachms, well diluted with water, or syrup and water.

60 minims = $8\frac{2}{3}$ grains of Bromide of Potassium in the quantity of Bromine.

ACIDUM HYDROCHLORICUM.

HYDROCHLORIC ACID.

Syn. Acidum Muriaticum purum; Chlorhydric Acid; Spirit of Salt.

A nearly colourless liquid, containing about 32 per cent. by weight of Hydrochloric Acid gas, HCl, eq. 36·5.

Tests.—Sp. g. 1·160. 114·8 grains by weight, diluted with ½ oz. of Distilled Water, require for neutralization 1000 grain-measures of the volumetric Solution of Soda. When volatilized by heat it should leave no residue. With Nitrate of Silver a curdy white precipitate is formed, insoluble in Nitric Acid, but soluble in excess of Ammonia. When diluted with four times its volume of Distilled Water, it gives no precipitate with Chloride of Barium, or with Sulphuretted Hydrogen, and does not tarnish bright copper-foil when boiled with it—indicating absence of Sulphuric Acid, metals, and Arsenic. If a drop or two of dilute Solution of Sulphate of Indigo be added to half an ounce of the Acid, the latter should acquire a permanent blue tint (absence of Chlorine and Nitric Acid).

For the detection of Sulphurous Acid, *see* under ACIDUM ACETICUM, page 4.

(Austr., 23·86 p. c., sp. g. 1·120; Belg., Port., and Span., sp. g. 1·180; Dutch, 25 p. c., sp. g. 1·126; Fr., 34·4 p. c., sp. g. 1·171; Dan., Ger., Hung., Norw., Russ., and Swed., 25 p. c., sp. g. 1·124; Swiss, 12·4 p. c., sp. g. 1·060, also Crudum, sp. g. 1·170; U.S. 31·9 p. c., sp. g. 1·160.)

Medicinal Properties.—Given in a very diluted form, as a refrigerant and tonic; applied with an equal quantity of Water to diphtheric patches in the throat.

Given with good results in chlorosis.—*L.M.R.* '81, 229.

Incompatibles.—Salts of Silver and Lead, Tartar Emetic, Alkalies, and their Carbonates.

Antidotes.—In cases of poisoning by Hydrochloric Acid, the antidotes are Chalk, Magnesia, Bicarbonate of Potash, with White of Egg, Carron Oil, or Soap-suds, followed by Enemata of Beef Tea and Brandy, with Tincture of Opium to prevent collapse; and Emollient Drinks.

Used in the preparation of Acidum Nitro-hydrochloricum Dilutum, Apomorphinæ Hydrochloras, Cocainæ Hydrochloras, Liquor Antimonii Chloridi, Liquor Arsenici Hydrochloricus, Liquor Ferri Perchloridi Fortior, and Quininæ Hydrochloras.

Preparation.

ACIDUM HYDROCHLORICUM DILUTUM.

Acid, 8; Distilled Water sufficient to make the mixture, when cooled to 60° F., measure 26½; or 3060 grains by weight of Acid, and Distilled Water sufficient to measure 20 oz. when cooled to 60° F. (15·5° C.).

Contains 10·58 per cent. of real Acid.

Test.—Sp. g. 1·052. Six fluid drachms (345 grains by weight) require for neutralization 1000 grain-measures of the volumetric solution of Soda, indicating 1 molecular weight in grains (36½) of Hydrochloric Acid, HCl.

Three and a third minims contain about 1 minim strong Acid.

Dose.—10 to 30 minims with aromatic or bitter infusions; for children, 1½ to 2 mins.; 1 drm. in 8 oz. of Infusion of Roses as a gargle for ulcerated sore throat and thrush.

Used in the preparation of Liquor Morphinæ Hydrochloratis and Liquor Strychninæ Hydrochloratis.

(Austr. and Dutch, 12·4 p. c., sp. g. 1·062; Belg. sp. g. 1·040; Dan., Hung., Norw., Swed., and U.S., 10 p.c., sp. g. 1·049; Ger., 12·5 p.c., sp. g. 1·061; Russ., 8·3 p.c., sp. g. 1·040; Swiss, Acidum Hydrochloricum, 12·4 p.c., sp. g. 1·060; not in the others.)

ACIDUM HYDROCYANICUM DILUTUM.

DILUTED HYDROCYANIC ACID.

Syn. Prussic Acid; Cyanhydric Acid.

Hydrocyanic Acid, **HCN**, eq. 27, dissolved in Water, and constituting 2 per cent. by weight of the solution.

Colourless, with a peculiar odour. It only slightly and transiently reddens Litmus.

It should be kept in well-corked bottles, tied over with impervious tissue. For reasons see Squibb's *Ephemeris*, Sept., 1883, p. 373.

Tests.—Sp. g. ·997. 270 grains by weight of the Acid, rendered alkaline by the addition of Solution of Soda, and maintained faintly alkaline throughout the operation, require the addition of 1000 grain-measures of the volumetric solution of Nitrate of Silver before a permanent precipitate begins to form, which corresponds to 2 per cent. of real Acid. This test is that of Liebig. The addition of the Soda to the Prussic Acid produces Cyanide of Sodium, and this again becomes Cyanide of Silver when the Nitrate of Silver is dropped in: but as one equivalent of Cyanide of Silver combines with one equivalent of Cyanide of Sodium to form a soluble compound, it is only when exactly one-half of the Cyanide of Sodium has been converted into Cyanide of Silver that a permanent precipitate is produced.

Treated with a minute quantity of a mixed solution of Sulphate and Persulphate of Iron, afterwards with Potash, and finally acidulated with Hydrochloric Acid, it forms Prussian Blue. No fixed residue is left after evaporation of 60 minims of this Acid. It gives no precipitate with Chloride of Barium, but with Nitrate of Silver it gives a white precipitate entirely soluble in boiling concentrated Nitric Acid—indicating absence of Sulphuric and Hydrochloric Acids.

We understand that manufacturers purposely add a trace of Hydrochloric Acid to retard decomposition; such a sample would consequently redden Litmus permanently, and the precipitate with Nitrate of Silver will be partially insoluble in boiling Nitric Acid.

(Belg., 2·5 per cent.; Fr., Acide Cyanhydrique Dissous, 1 p. c.; Norw. and Swiss, 2 p. c.; Port., strength not given; Russ. and U.S., 2 per cent.; Span., 10 p. c.; not in the others. See also Aqua Amygdalarum Amarum.)

Medicinal Properties.—As this Acid is a dangerous poison, it should never be prescribed alone.

It is sedative, antispasmodic, allays vomiting, is useful in gastrodynia, and in dyspeptic palpitations. Used externally to allay itching of the skin when unbroken; as a **lotion** 2 drms. to 8 oz. of Rose Water and Glycerine; as an **ointment** from ½ drm. to 1 drm. to each ounce of Zinc Ointment.

The vapour is sometimes applied to the eye, but it is more generally used as a sedative inhalation in the cough of laryngeal phthisis and in some spasmodic affections.

Prescribed in Almond Emulsion for cough, and with Bicarbonate of Sodium, Carbonate of Bismuth, and Peppermint Water for dyspepsia.

Dose.—2 to 8 minims.

Maximum single dose of Hydrocyanic Acid (corrected for 2 per cent. acid) in Belg. and Ger. is $\frac{3}{4}$ grain, and the maximum daily dose of the same is 3 grains.

Incompatibles.—Salts of Silver, Copper, Iron, Red Oxide of Mercury, Sulphurets.

Antidotes.—In cases of poisoning, the antidotes are fresh air and artificial respiration, with cold affusion; freshly precipitated Oxide of Iron, with an Alkaline Carbonate, thus, 10 grs. of Sulphate of Iron, with a drachm of Tinct. of Iron and 1 oz. of Water, followed by 20 grs. of Carbonate of Potassium dissolved in 1 oz. of Water. This will render insoluble 110 minims of Br. Ph. Acid. Stimulants—Ammonia and Brandy; Hypodermic injection of Atropine, $\frac{1}{60}$ grain.

Used in the preparation of Tinctura Chloroformi et Morphinæ.

Preparation.

VAPOR ACIDI HYDROCYANICI.

Diluted Hydrocyanic Acid, 10 to 15 minims; cold Water, 60 minims; mix in a suitable apparatus, and let the vapour that arises be inhaled.

Not Official.

ACIDUM HYDROFLUORICUM.

An aqueous solution of Hydrofluoric Acid Gas obtained by passing into water the gas produced by the action of Sulphuric Acid on Fluor Spar.

The commercial acid thus obtained is redistilled for therapeutic use.

The redistilled acid contains about 30 per cent. of the gas.

Inhalations have been tried in phthisis.—*L.* '86, ii. 1046; '88, i. 1224; '89, i. 496; *B.M.J.* '88, i. 758, 933.

Preparation.

ACIDUM FLUORICUM DILUTUM (*T. H.*)—A half per cent. solution of the Redistilled Acid.

Dose.—20 to 60 minims.

Recommended as an adjunct, in the treatment of bronchocele.

Not Official.

ACIDUM HYPOPHOSPHOROSUM.

H_3PO_2, eq. 66.

Prepared by treating solution of Hypophosphite of Calcium with solution of Oxalic Acid, filtering, diluting, and heating the fluid to 100° C., setting aside for five days to subside; filter again and evaporate to a sp. g. 1·1367, and the product will contain 30 per cent. of Hypophosphorous Acid. It should give but a faint precipitate with solutions of Oxalate of Ammonium, Chloride of Barium, or Sulphate of Lime. When neutralised with Ammonia and heated with solution of Acetate of Lime containing excess of Acetic Acid only a faint cloudiness should be produced.—*P.J.* xviii. 872.

We find that 5 grms. of Hypophosphorous Acid, sp. g. 1·136, titrated with N. Soda Solution (indicator Phenol-Phthalein), requires for neutralization 25·2 c.c., which is equal to 33 per cent. of H_3PO_2.

Heated with Solution of Perchloride of Mercury to 60° C. (140° F.), Calomel is precipitated, from the weight of which the percentage of Hypophosphorous Acid may be calculated, 100 parts of Calomel produced being equivalent to 7 parts of Acid.

Used in the manufacture of the Solution and Syrup of Hypophosphite of Iron, &c.

ACIDUM LACTICUM.

LACTIC ACID.

A syrupy liquid, colourless, or of a very pale yellow tint, and very sour taste, containing about 75 per cent. of $HC_3H_5O_3$, eq. 90. It is produced by the action of a peculiar ferment on solution of Sugar and subsequent purification of the product.

It is miscible in all proportions with Water, Rectified Spirit, and Ether, but nearly insoluble in Chloroform.

Tests.—Sp. g. 1·210 (or, rather, 1·22). 120 grains require for neutralization 1000 grain-measures of the volumetric Solution of Soda. A solution in about 10 parts of Water, neutralized by Ammonia, is not precipitated by Sulphide of Ammonium (absence of Lead and Iron). Not more than a faint opalescence is produced with Chloride of Barium (Sulphates), Nitrate of Silver (Chlorides), or Oxalate of Ammonium (Calcium), nor when boiled with excess of Fehling's Solution is any precipitate formed (absence of Sugars).

B. P. volumetric test and sp. g. do not quite agree.

(Belg., Fr., Port., and Span., sp. g. 1·215; Austr., Ger., and Swiss, sp. g. 1·21—1·22; Russ., sp. g. 1·236—1·240; U.S. sp. g. 1·212; not in the others.)

Medicinal Properties.—It is used as a **spray** in diphtheria, 1 part to 16 parts of Water.

The concentrated Acid has been employed on absorbent wool in the treatment of lupus.

Preparations.

ACIDUM LACTICUM DILUTUM.

Lactic Acid, 3; Distilled Water sufficient to produce 20.

Tests.—Sp. g. 1·040. 700 grains by weight require for neutralization 1000 grain-measures of the volumetric Solution of Soda.

Dose.—30 to 120 minims.

In infantile diarrhœa teaspoonful doses of a 2 per cent. solution of Lactic Acid.—*L.* '88, i. 292, *T.G.* '87. 480.

Not Official.

SYRUPUS CALCIS LACTOPHOSPHATIS.

(Fr. Codex.—Bicalcic Phosphate, 12·5; Lactic Acid, sp. g. 1·21, q.s. (about 14); Distilled Water, 340; Sugar, 630; Alcoolature de Citron, 10. All by weight. It contains 1·25 per cent. Bicalcic Phosphate.)

(U.S. Ph.—Precipitated Phosphate of Lime, 22; Lactic Acid, 33; Orange-flower Water, 80; Sugar, 600; Water sufficient to make 1000. All by weight. It contains about 2 per cent. of Phosphate of Lime.)

ACIDUM MECONICUM.

MECONIC ACID.

$H_3C_7HO_7 3H_2O$, eq. 254.

An Acid obtained from Opium in micaceous crystals.

Solubility, 1 in 150 of Water; it is decomposed by boiling water; 1 in 45 of Rectified Spirit.

Tests.—It is coloured red by neutral solution of Perchloride of Iron, the colour being discharged by strong but not by diluted Hydrochloric Acid. The aqueous solution gives no precipitate with solution of Iodine and Iodide of Potassium (absence of Alkaloids).

Used only to prepare the *Official* Liquor Morphinæ Bimeconatis.

ACIDUM NITRICUM.

NITRIC ACID.

Syn. AZOTIC ACID.

Colourless. Contains 70 per cent. by weight of real Acid, $\mathbf{HNO_3}$, eq. 63.

Tests.—Sp. g. 1·420. Boiling Point 250° F. (121° C.). 90 grains by weight, mixed with half an ounce of Distilled Water, require for neutralization 1000 grain-measures of the volumetric Solution of Soda. When evaporated to dryness, it leaves little or no residue. If it be poured upon copper filings, dense red fumes are formed. Diluted with six volumes of Distilled Water, it gives no precipitate with Chloride of Barium or Nitrate of Silver—indicating absence of Sulphuric and Hydrochloric Acids.

5 measures of Acid, sp. g. 1·500, and 2 of Water mixed, condense into $6\frac{1}{2}$ measures, and make the sp. g. 1·420.

(Austr., sp. g. 1·300; Belg., sp. g. 1·330; Dan., Norw., and Swed., sp. g. 1·180; Dutch, sp. g. 1·317; Fr., sp. g. 1·390; Ger., sp. g. 1·185; Hung. sp. g. 1·310; Port., sp. g. 1·300—1·330; Russ. sp. g. 1·200; Span., sp. g. 1·321; Swiss, sp. g. 1·130; U.S. sp. g. 1·420.)

Medicinal Properties.—It is strongly corrosive, and is applied as a caustic to warts, phagedænic sores and chancres by means of a pointed glass rod. When diluted it is refrigerant, tonic, and antiseptic; and if very much diluted forms a drink in febrile diseases, and is used also as an injection in phosphatic calculus. The diluted Acid is useful in diarrhœa. Thirty minims in ten ounces of Water is an excellent **lotion** for bleeding piles (Ringer).

Incompatibles.—Alcohol, Alkalies, Oxides, Sulphate of Iron, Acetate of Lead, all Carbonates and Sulphurets.

Antidotes.—In case of poisoning by Nitric Acid, the antidotes are Chalk, Magnesia, or Carbonated Alkalies, with White of Egg, Carron Oil, or Soap-suds, followed by Enemata of Beef Tea and Brandy, with Tinct. of Opium to prevent collapse; emollient drinks.

Used in the preparation of Acidum Nitrohydrochloricum Dilutum, Acidum Phosphoricum Concentratum, Argenti Nitras, Bismuthi Carbonas, Bismuthi Subnitras, Hydrargyri Oxidum Rubrum, Liquor Ferri Pernitratis, Liquor Hydrargyri Nitratis Acidus, Pilocarpinæ Nitras, Unguentum Hydrargyri Nitratis.

Preparation.

ACIDUM NITRICUM DILUTUM.

Nitric Acid, 6; Distilled Water sufficient to make the mixture, when cooled to 60° F. (15·5° C.), measure 31; or 2400 grains by weight of Acid, and Distilled Water sufficient to measure 20 oz. when cooled to 60° F. (15·5° C.) Colourless. Contains 17·44 per cent. of real Acid.

Test.—Sp. g. 1·101. Six fluid drachms (361·3 grains by weight) require for neutralization 1000 grain-measures of the volumetric solution of Soda, corresponding to one molecular weight in grains (63) of real Acid, $\mathbf{HNO_3}$.

Dose.—10 to 30 minims diluted with Water. For children $1\frac{1}{2}$ min.
5 minims contain about 1 minim of strong Acid.

Prescribed with bitter infusions and Tincture of Orange. Infusion of Roses made with this Acid, instead of Sulphuric Acid, and sweetened, is the most elegant form for administering Quinine with this astringent. Sulphuric Acid, by precipitating the Tannate of Quinine, makes a turbid mixture (*P. J.*, i. 585).

(Austr., sp. g. 1·129; Belg., sp. g. 1·120; Dutch, sp. g. 1·12; Hung., sp. g. 1·067; Russ., sp. g. 1·096; U.S., sp. g. 1·059; not in the others.)

Used in the preparation of Ammonii Nitras and Cupri Nitras.

ACIDUM NITROHYDROCHLORICUM DILUTUM.

DILUTED NITRO-HYDROCHLORIC ACID.

Nitric Acid, 3; Hydrochloric Acid, 4; Water, 25. Add the Acids to the Water, and keep the mixture in a glass-stoppered bottle for fourteen days before it is used. Colourless.

Test.—Sp. g. 1·070. 6 fluid drachms (352 grains by weight) require for neutralization about 883 grain-measures of the volumetric Solution of Soda.

16 minims equal 1½ minim of Nitric Acid and 2 minims of Hydrochloric Acid.

U.S., orders the undiluted—Nitric Acid, 4; Hydrochloric Acid, 15; also the diluted—Nitric Acid, 4; Hydrochloric Acid, 15; Water, 76.
Norw., Nitric Acid, 1; Hydrochloric Acid, 2.
Russ., and Swiss, Nitric Acid, 1; Hydrochloric Acid, 3.
Fr., Eau Regale—Nitric Acid, 8; Water, 2; Hydrochloric Acid, 30.
Dublin Pharmacopœia was—Nitric Acid, 1; Muriatic Acid, 2.
(Not in the other Pharmacopœias.)

Medicinal Properties.—Tonic, stomachic, and alterative. Externally as a **lotion** or **bath,** for obstructions of the liver.

Is an hepatic stimulant of considerable power.—Dr. Rutherford.

Dose.—5 to 20 minims in 1½ oz. Water, and for children 1 min. with Succus Taraxaci; it goes well with Tincture of Gentian or Tincture of Orange.

Incompatibles.—Alkalies, Carbonates, Sulphurets, Salts of Silver and Lead.

Antidote.—Albumen freely administered, after evacuating the stomach.

Directions for Preparing and Using the Bath.

Mix 8 ounces by measure of diluted Nitro-hydrochloric Acid with 1 gallon of Water, temperature 96° or 98° F. Let a flannel roller* of ten or twelve inches wide, and sufficient to encircle the body twice, be soaked in the fluid and then wrung, so as to remain only damp. Apply this instantly to the body, covering it with a piece of oiled silk to avoid damping the dress. It should be worn constantly, but should be changed, soaked, and wrung, morning and evening. Glass, glazed earthenware, or wooden vessels should be used. Sponges and towels to be kept in Water to prevent them corroding.

ACIDUM OLEICUM.

OLEIC ACID.

A fluid fatty Acid, $HC_{18}H_{33}O_2$, eq. 282, usually not quite pure, obtained by the saponification of Olein, or by the action of superheated steam on fats, with subsequent separation from solid fats by pressure.

A straw-coloured liquid nearly odourless and tasteless and with not more than a very faint acid reaction; unduly exposed to air it becomes brown and decidedly acid.

B. P. Sp. g. 0·860—0·890. It becomes semi-solid at 40° to 41° F. (4·5° to 5° C.), melting again at 56° to 60° F. (13·3° to 15·5° C.).

Allen gives the sp. g. ·897, which agrees with the best commercial samples. These froze at 33° F. (·5° C.), and cleared again at 42°—45° F. (5·5°—7·2° C.).

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* These, with the oiled silk attached, can be had of the chemists ready made.

Mixes in all proportions with Alcohol, Chloroform, Ether, Benzol, Oil of Turpentine, and fixed oils. Insoluble in Water.

Tests.—At a gentle heat the Acid is completely saponified by Carbonate of Potassium; this salt dissolved in water, carefully neutralized with Acetic Acid, and treated with Solution of Acetate of Lead, should yield a white precipitate, which after being washed with boiling water is almost entirely soluble in Ether (absence of more than traces of Palmitic and Stearic Acids).

This B.P. test does not work satisfactorily, except with precautions not there indicated, owing to the liability to precipitate lead compounds insoluble in Ether, also the difficulty of *neutralising* a soap solution which of itself is alkaline to most indicators.

A much simpler method is to dissolve the Oleic Acid in a small quantity of Alcohol, add a drop of Phenol-Phthalein Solution, and then Caustic Alkali, till a red colour just appears, dilute with Water, and precipitate in the cold with the smallest possible excess of Lead Acetate. After the precipitate has agglomerated, wash with boiling Water, rinse with cold Alcohol, and dissolve finally in *pure* Ether.

A good sample should dissolve with only a slight turbidity.

Equal volumes of Oleic Acid and Rectified Spirit heated to 77° F. (25° C.) should give a clear solution, without separation of oily drops upon the surface (fixed Oils).

(U.S., sp. g. 0·800 to 0·810, but tests and sp. g. do not agree. Not in the others.)

Used in pharmacy for dissolving Oxide of Mercury, Oxide of Lead, Oxide of Zinc, and the alkaloids Morphine, Aconitine and Atropine; but the true Oleates are best formed by double decomposition.

Oleatum Hydrargyri and Oleatum Zinci are now Official and will be found under their respective metallic headings.

Not Official.

ACIDUM OSMICUM.

TETROXIDE OF OSMIUM.

OsO_4, eq. 262·5.

A pale yellow crystalline substance giving off an excessively irritating vapour, which attacks the eyes and nose.

Chiefly used as 1 per cent. aqueous **solution** for fixing and staining in histological work. Fat and nerve substances are blackened by it. The solution should be kept from the light.

4 to 6 mins. of a 1 p. c. aqueous **solution** of Osmic Acid or Osmate of Potassium have been injected hypodermically for sciatica and other forms of neuralgia.—*L.M.R.* '85,414.

Should not be dissolved in Alcohol or Ether, as decomposition ensues.

ACIDUM PHOSPHORICUM CONCENTRATUM.

CONCENTRATED PHOSPHORIC ACID.

A colourless syrupy liquid, containing Phosphoric Acid, H_3PO_4, eq. 98, with 33·7 per cent. of Water.

Tests.—Sp. g. 1·5. 73·8 grains by weight mixed with 180 grains of Oxide of Lead in fine powder leave, by evaporation, a residue (principally Phosphate of Lead), which after it has been heated to dull redness weighs 215·5 grains. Evaporated, it leaves a residue which melts at a low red heat, and upon cooling exhibits a glassy appearance. When diluted with Water, it gives a canary-yellow precipitate with Ammonio-nitrate of Silver, soluble in Ammonia and in Diluted Nitric Acid (as is the case also with aqueous Solution of Arsenious Acid); it is not precipitated by Sulphuretted Hydrogen passed through the hot solution for a few minutes, Chloride of Barium, Nitrate of Silver acidulated with Nitric Acid, or by a solution of Albumen—indicating absence of metals (particularly Arsenic), Sulphuric Acid, Hydrochloric Acid, and Metaphosphoric Acid. When mixed with an equal volume of pure Sulphuric Acid, and then introduced into a Solution of Sulphate of Iron, it does not communicate to it a dark colour—indicating absence of Nitric Acid.

When made alkaline with Ammonia it should not give (even after long standing) a crystalline precipitate of Ammonio-Magnesian Phosphate (indicating absence of Magnesium, which is present to a considerable extent in some commercial samples).

(Austr., sp. g. 1·094 (16·66 p. c.); Belg. and Fr., sp. g. 1·35 (50 p. c.); Dutch, sp. g. 1·153 (25 p. c.); Ger. and Hung., sp. g. 1·120 (20 p. c.); Port., sp. g. 1·880; Russ., sp. g. 1·130 (22 p. c.); Span., sp. g. 1·454; Swiss, sp. g. 1·117 (20 p. c.); U.S., sp. g. 1·347 (50 p. c.); not in the others.)

Used to prepare Syrupus Ferri Phosphatis and in several non-official formulas.

Preparations.

ACIDUM PHOSPHORICUM DILUTUM.

Contains 13·8 per cent. by weight of Phosphoric Acid, H_3PO_4, eq. 98, corresponding to 10 per cent. of Phosphoric Anhydride, P_2O_5, eq. 142.

Concentrated Phosphoric Acid, 3 fl. oz.; Distilled Water sufficient to make 20 fl. oz.: mix.

Tests.—Sp. g. 1·080. 6 fluid drachms (355 grains by weight) poured upon 180 grains of Oxide of Lead (Litharge) in fine powder, leave, after evaporation, a residue which, having been heated to redness, weighs 215·5 grains, and is principally Phosphate of Lead.

For tests of purity *see* Acidum Phosphoricum Concentratum.

Note.—Diluted Phosphoric Acid may be prepared from a concentrated Phosphoric Acid of any strength, provided the product have sp. g. 1·08, and respond to the tests.

(Dan., Norw., Port., and Swed., sp. g. 1·080 (14 p. c.); Russ., sp. g. 1·062 (11 p. c.); U.S., sp. g. 1·057 (10 p. c.); not in the others.)

Medicinal Properties.—Tonic and refrigerant, having properties similar to Sulphuric Acid, but more palatable, and it allays tickling cough; it is said to correct the phosphates in the urine, and to allay thirst in diabetes. Given with Phosphate of Lime in rickets. It is also found useful in cases of vomiting and diarrhœa arising from a bilious attack, if given in frequent doses.

Used as a partial substitute for organic acids in cooling drinks and acidulated waters.

Dose.—10 to 30 minims largely diluted with Water; for children 1 to 2 mins.

Incompatibles.—Lime Water, Calcareous Salts, Carbonate of Sodium.

May be prescribed with some bitter and aromatic tinctures and syrups, or with Syrup of the Phosphate of Iron, but not with the Syrup of Pyrophosphate of Iron, as the mixture becomes solid.

Used in the preparation of Ammonii Phosphas.

Not Official.

ACIDUM PHOSPHORICUM GLACIALE.

METAPHOSPHORIC ACID.

HPO_3. eq. 80.

Colourless, transparent, glass-like masses, which absorb moisture from the air, and become liquid; the solution is slowly converted into Orthophosphoric Acid in the cold, and rapidly on boiling.

Commercial Acid contains large quantities of Ammonia, equal in some cases to 40 per cent. of Phosphate of Ammonia.

Soluble in water; the solution coagulates albumen and gives a white precipitate with a salt of Barium.

(Swiss; not in the others.)

Not Official.

ACIDUM PICRICUM.

PICRIC ACID. CARBAZOTIC ACID. TRINITROPHENOL.

Pale yellow crystalline scales.

With Potash and Soda it forms crystallisable Salts which are explosive.

Solubility.—1 in 75 of Water; 1 in 10 of Rectified Spirit.

A saturated aqueous Solution is a delicate test for the presence of Albumen in fluids; even in very dilute Solutions a white cloud is formed at the junction of the two fluids, and in stronger solutions the Albumen is precipitated.

(Fr.; not in the others.)

Not Official.

ACIDUM PYROGALLICUM.

PYROGALLIC ACID. PYROGALLOL.

Usually prepared by heating Gallic Acid to 185°—200° C.

Professor Thorpe has published an easy and cheap method for making Solution of Pyrogallic Acid, by mixing Gallic Acid and Glycerine, and heating the mixture to 190° C.—200° C. (not exceeding the latter), so long as bubbles are seen to form in the liquid.—*P.J.*, xi. 990.

It occurs in white flaky crystals, which blacken by exposure to light. It colours Ferrous Salts an intense blue, and Ferric Salts a brownish red; with alkalies it browns very quickly on exposure to air.

Solubility.—1 in 2 of Water, and measures $2\frac{1}{2}$; 9 in 10 of Rectified Spirit.

Largely used in photography.

1 in 16 of Water is used with a solution of Nitrate of Silver, 1 in 30 of Water, for blackening the hair.

A 2 per cent. solution in Water acts as an antiseptic.—*B.M.J.* '79, i. 278.

Used in the form of a 10 per cent. salve, and applied with a brush twice a day, it proved very useful in Hebra's wards in the treatment of psoriasis. The parts were then covered with cotton wadding or linen, and when very extensive were covered with flannel.—*Pr.* xxv. 377.

Not more than 15 to 25 grains should be used in the 24 hours.—*T.G.* '85, 59.

An ointment, Pyrogallic Acid, 40; Starch, 40; Vaseline, 120; also a powder, Pyrogallic Acid 20, Starch 80, have been used for venereal ulcers.—*L.M.R.* '82, 228; *L.M.R.* '84, 68.

Mixed with Collodium Flexile, 40 grains to the ounce for psoriasis.—*T.G.* '86, 181.

(Austr., Dutch, Fr., Ger., Hung., and Swiss; not in the others.)

UNGUENTUM ACIDI PYROGALLICI (Jarisch's Ointment).—Pyrogallic Acid, 60 grs.; Lard, 1 oz.: mix.—*British Skin Hospital.*

UNNA'S PYROGALLIC PLASTER MULL.—Contains 40 per cent. of the Acid, equal to $\frac{1}{2}$ grain in each square inch of surface.

Not Official.

ACIDUM PYROLIGNEOSUM CRUDUM.

A brown liquid having an odour of Tar and Acetic Acid, and containing about 6 per cent. of the latter. Deposits a tarry substance on standing for some time.

(Dan., Ger., Russ., and Swiss; not in the others.)

Medicinal Properties.—A good antiseptic.

ACIDUM SALICYLICUM.

SALICYLIC ACID.

$HC_7H_5O_3$, eq. 138

In shining white needles, prepared by passing Carbonic Acid into a mixture of Carbolic Acid and Caustic Soda at a high temperature, and decomposing the Salicylate of Sodium with an Acid, and subsequent purification; or by treating Oil of Winter Green, which is mainly composed of Salicylate of Methyl, also Oil of Sweet Birch (*Betula lenta*) and *Andromeda leschenaultii* (a native of India), with a solution of Caustic Potash, and distilling it, decomposing the residue with Hydrochloric Acid, and purifying the Salicylic Acid by recrystallization.

The natural acid is preferable to the artificial for internal use.—*B.M.J.* '81, ii. 934; *B.M.J.* '86, i. 735; *B.M.J.* '89, ii. 1208.

Solubility.—The natural acid is not so soluble as the artificial. When both were in very fine powder, the figures obtained were. artificial, 1 in 400; natural, 1 in 550, in Water at 60° F. after 3 days; but if both are dissolved by the aid of heat, the point at which both cease to crystallise out at 60° F. is as near as possible 1 in 475; 1 in 9 of boiling Water; 1 in 15 of Proof Spirit; 1 in 3½ of Rectified Spirit; 1 in 2 of Ether; 1 in 55 of Chloroform; 1 in 120 of Olive Oil; 1 in 195 of Glycerine; 1 in 8 of Lard (at 180° F.). 20 grains Salicylic Acid are rendered soluble in a fluid ounce of Water by the addition of 25 grains of Borax, or 40 grains of Citrate of Potash; but it is better to use Salicylate of Sodium.

Tests.—An aqueous solution of Salicylic Acid gives a reddish-violet colouration with Persalts of Iron. Dissolve 1 of the Acid in 10 of Rectified Spirit, and leave it to evaporate in a watchglass at the ordinary temperature of the air. It forms round the edge of the watchglass a ring of beautiful efflorescent aggregated crystals. This mass is *pure white* if the Acid used be quite pure and has been recrystallized, but yellowish if simply the precipitated Acid be used.

(Austr., Belg., Dutch, Fr., Ger., Hung., Norw., Port., Russ., Span., Swed., Swiss, and U.S.; not in Dan.)

Medicinal Properties.—Antiseptic and antipyretic; useful in acute and chronic rheumatism, but generally given in the form of Salicylate of Sodium, as it is more soluble in water and less irritating to the stomach.

Used as a **lotion** (4 per cent.) in pruritus and urticaria, and some forms of eczema; as an **injection** (1 in 300) in the dysenteric diarrhœa of children; as an **ointment** (1 in 6) for pruritus (Ringer).

It is not a safe remedy when renal disease is present (P. James).

Dose.—5 to 30 grains.

Incompatible.—Spirit of Nitrous Ether.

Preparations.

UNGUENTUM ACIDI SALICYLICI.

Salicylic Acid, 1; Soft Paraffin, 18; Hard Paraffin, 9: melt the Paraffins, add the Acid, and stir together until cold. =(1 in 28).

(Not in the foreign Pharmacopœias.)

SALICYLATE OF SODIUM.—*See* SODII SALICYLAS.

Not Official.

UNGUENTUM ACIDI SALICYLICI.—Salicylic Acid, 30 grs.; Benzoated Lard, 1 oz., melt over a water-bath and stir till cold.—*British Skin Hospital.*

Used for eczema, psoriasis, ringworm, and for foul ulcers.

PULVIS SALICYLICUS CUM TALCO, Ph. Ger.—Salicylic Acid, 3; Wheat Starch, 10; Talc, 87: mix to a fine powder. Used in the German Army as a preventive against perspiring and sore feet. It is applied dry, on a march daily, in garrison every two or three days. U.S.N.F. substitutes Boric Acid in the place of Wheat Starch.

SALICYLIC ACID SUET.—Salicylic Acid, 2; Mutton Suet, 100: used in the German Army for sweaty feet and soreness from riding.—*B.M.J.* ii. '85, 219.

SALICYLIC AND CREASOTE PLASTER MULLS (Unna).—Contain ½ grain of Salicylic Acid and 1 grain of Creasote to the square inch; also twice this strength. Possess a solvent power on horny epidermis, the Creasote acting as an anæsthetic. Also used in the treatment of lupus.—*L.* '86, ii. 574, and *B.M.J.* '87, ii. 451.

Salicylic Acid and Creasote can also be applied as an ointment with Lard and Wax.

COLLODIUM SALICYLICUM.—Salicylic Acid, 30; Extract of Indian Hemp, 5; Flexile Collodion, 240: dissolve.

Useful in the treatment of hard and soft corns.—*P.J.*, xiii. 884.

HEGER'S PRESERVATIVE FLUID.—Salicylic Acid, 20; Boric Acid, 25; Potassium Carbonate, 5; dissolve in hot water, 500; Glycerine, 200; then add Oil of Cinnamon, 15; Oil of Cloves, 15; dissolved in Alcohol, 500. This is stated to be more effective than Wickerscheimer's Fluid.—*L.M.R.* '81, 132.

SALICYLIC DRESSINGS.—**Gauze, Lint,** and **Wool,** 4 per cent.; **Jute,** 4 and 10 p. c.; **Lac Plaster,** 33⅓ p. c.

ACIDUM SULPHURICUM.

SULPHURIC ACID.

A colourless oily liquid; boils at about 620° F. (326·6° C.); contains about 98 per cent. by weight of real Sulphuric Acid, H_2SO_4, eq. 98.

Tests.—Sp. g. 1·843.* 50 grains by weight, mixed with an ounce of Distilled Water, require for neutralization 1000 grain-measures of the volumetric solution of Soda. It evolves much heat on the addition of water, and when thus diluted gives a copious white precipitate with Chloride of Barium. Evaporated in a platinum crucible, leaves little or no residue; diluted with six times its volume of Distilled Water, it gives no precipitate with Sulphuretted Hydrogen; when a solution of Sulphate of Iron is poured upon it, no purple ring is formed at the junction of the two solutions—indicating absence of fixed impurities, Arsenic, and Nitric Acid. Sulphate of Lead if present falls in a white precipitate by dilution merely.

Sulphuric Acid exists in two other states: a solid crystalline form, resembling Asbestos, which is used in the arts; and Nordhausen Acid, a fuming liquid, which has been employed for the cure of cancer.

(In all the Pharmacopœias, ranging from sp. g. 1·840 to 1·845.)

Medicinal Properties.—A powerful caustic, and when so used it is made into a paste with an equal quantity of charcoal; when diluted it is tonic, refrigerant, astringent, exciting the appetite and promoting digestion; it is useful in controlling choleraic diarrhœa; it diminishes night sweating, more particularly when given with Sulphate of Zinc; useful in treating lead colic.

Incompatibles.—Alkalies and their Carbonates, Salts of Lead and Lime.

Antidotes.—In case of poisoning by Sulphuric Acid, Magnesia is preferred to Chalk. For other antidotes *see* Hydrochloric and Nitric Acids.

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* True Monohydrated Sulphuric Acid has a sp. g. 1·848.

Used in the preparation of Acidum Hydrochloricum, Acidum Hydrocyanicum Dilutum, Acidum Nitricum, Acidum Sulphurosum, Æther, Beberinæ Sulphas, Chloroform, Cupri Sulphas, Ferri Sulphas, Ferri Sulphas Granulata, Hydrargyri Persulphas, Liquor Ferri Persulphatis, Quininæ Sulphas, Zinci Sulphas.

Preparations.

ACIDUM SULPHURICUM AROMATICUM. Elixir of Vitriol.

Contains 12·5 per cent. by weight of real Acid.

Sulphuric Acid, 3; Rectified Spirit, 36; Spirit of Cinnamon, 2; strong Tincture of Ginger, 2: mix the Acid gradually with the Spirit, and add the Spirit of Cinnamon and Tincture of Ginger.

Tests.—Sp. g. ·925. B.P. gives ·911, but this is obviously too low. 195 grains by weight require for neutralization 500 grain-measures of the volumetric solution of Soda.

Note.—Brit. Pharm., 1867, ordered the Cinnamon and Ginger in powder and digested the whole for seven days. It made a preparation like the old Elixir of Vitriol, a deep red. The new formula gives a pale orange brown, which will get darker by keeping.

Dose.—5 to 30 minims diluted with Water.

(U.S. Sulphuric Acid, 200; Tincture of Ginger, 45; Oil of Cinnamon, 1; Alcohol sufficient to weigh 1000: add the Sulphuric Acid to 700 of Alcohol and allow it to cool, then add to it the Tincture of Ginger and Oil of Cinnamon, and finally enough Alcohol to make the product weigh 1000.)

It is used in the preparation of Infusum Cinchonæ Acidum.

ACIDUM SULPHURICUM ALCOHOLISATUM.—*See* Not Official.

ACIDUM SULPHURICUM DILUTUM.

Contains 13·65 per cent. by weight of real Acid.

Sulphuric Acid, 7; mix gradually Distilled Water, sufficient to measure 83½ when cooled to 60° F.; or 1350 grains by weight of Acid, and Distilled Water sufficient to measure 20 oz. when cooled to 60° F.

Test.—Sp. g. 1·094. 6 fluid drachms (359 grains by weight) require for neutralization 1000 grain-measures of the volumetric solution of Soda, indicating half a molecular weight in grains (49) of real Acid, H_2SO_4.

12 minims contain 1 minim of strong Sulphuric Acid.

Dose.—5 to 30 minims; for children 1 min.

Prescribed much diluted, in mixtures; or in cough linctuses, with Squill, Poppies, and Syrup of Mulberries; also to dissolve Quinine.

(Austr., Acid 1, Water 4·76, sp. g. 1·12; Belg., Dutch, Ger., Russ., and Swiss. Acid 1, Water 5, sp. g. 1·110—1·117; Dan., Norw., and Swed., Acid 1, Water 7, sp. g. 1·081—1·085; Span., Acid 1, Water 8; Fr., Hung., Port., and U.S., Acid 1, Water 9, sp. g. 1·067—1·069: all are by weight.)

Used in the preparation of Aconitina, Antimonium Sulphuratum, Atropina, Atropinæ Sulphas, Beberinæ Sulphas, and Infusum Rosæ Acidum.

Not Official.

MYNSICHT'S ELIXIR OF VITROL.—Cinnamon, Ginger, Cloves, each 3; Calamus Aromaticus, 8; Galangal, 12; Sage, 4; Peppermint, 4; Cubebs, 2; Nutmeg, 2; Aloes Wood, 1; Lemon Peel, 1; Sugar Candy, 32; Rectified Spirit, by weight, 144; Sulphuric Acid, by weight, 96. Digest for three weeks.

Dose.—5 to 10 minims.

ACIDUM SULPHURICUM ALCOHOLISATUM. LIQUOR ACIDUS HALLERI. MISTURA SULPHURICA ACIDA. AQUA RABELLI.

Sulphuric Acid, 1; Alcohol (90 p. c.), 3; Austr., Belg., Ger., Hung., Port., Russ., Span., and Swiss.
Sulphuric Acid, 1; Alcohol (90 p. c.), 3; Poppy Petals, ·04; Fr.
Sulphuric Acid, 1; Alcohol, 1; Dan., Dutch, Norw., and Swed.

ACIDUM SULPHUROSUM.

SULPHUROUS ACID.

Sulphurous Anhydride, SO_2, eq. 64, dissolved in water.

A colourless liquid, with a pungent sulphurous odour; contains 5 per cent. by weight of Sulphurous Acid gas, or Sulphurous Anhydride, SO_2; equivalent to 6·4 per cent. of real Acid, H_2SO_3.

Tests.—Sp. g. 1·025. 64 grains mixed with 20 oz. of recently boiled and cooled Distilled Water and a little mucilage of Starch do not acquire a permanent blue colour with the volumetric solution of Iodine, until 1000 grain-measures of the latter have been added. This is a test of its strength, for if there be sufficient Sulphurous Acid it will convert the whole of the 1000 grain-measures of the volumetric solution of Iodine into Hydriodic Acid, which does not render starch blue. Evaporated, it leaves no residue.

The test of the 1867 Pharmacopœia was much too high; it has been reduced from 9·2 p. c. to 5 p. c. of Sulphurous Anhydride.

(Port., Soluto de Gaz Sulfuroso; Swiss, sp. g. 1·040 (9 p. c.); U.S. sp. g. 1·022—1·023 (3·5 p. c.); not in the others.)

Medicinal Properties.—It is a powerful deoxidizing agent, disinfectant and antiseptic, and is destructive to vegetable life. Diluted with 1 or 2 parts of Water it is used as a **spray** in diphtheria and ulcerated sore-throat; mixed with equal parts of Glycerine, as an **application** in erysipelas, also for chapped hands and chilblains; as a **lotion**, 1 or 2 drms to 1 oz. of Water, for wounds, cuts, ulcers, and bed-sores; as an **inhalation** (60° to 100° F.), 60 minims in 20 oz. of Water. Given **internally** for scarlet fever and diphtheria in full and repeated doses. It destroys parasitic lichen on the skin.

10 minims just before a meal prevents flatulence due to fermentation.

Dose.—½ to 1 drm., in a wineglassful of water, three times a day, relieves constant sickness. It is best given in Almond Emulsion.

SULPHITE OF SODIUM and **HYPOSULPHITE OF SODIUM** will be found under "**SODIUM.**"

ACIDUM TANNICUM.

TANNIC ACID.

Syn. Gallo-Tannic Acid.

$C_{27}H_{22}O_{17}$, eq. 618.

An Acid, extracted from Galls. In pale yellow vesicular masses or thin glistening scales.

Solubility.—10 in 5 of Water; 10 in 6 of Rectified Spirit; 3 in 1 of Absolute Alcohol; 1 in 100 of Ether; 1 in 3 of Glycerine, or if warmed, 1 in 2; sparingly in Olive Oil; almost insoluble in Benzol and Chloroform.

These solubilities were made with Tannic Acid, which was very soluble, but different samples vary in solubility.

Tests.—Exposed to heat on platinum foil it partly melts, swells up, blackens, and at length burns away with a brilliant flame, leaving no residue. The organic matter is first reduced to charcoal, and then burnt away—indicating absence of earthy matters. It strikes a bluish black colour with Persalts of Iron. It precipitates solution of Gelatine, which distinguishes it from Gallic Acid.

(Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Norw., Port., Russ., Span., Swed., Swiss, and U.S.)

Medicinal Properties.—Styptic and astringent. 60 grs. in 10 oz. of Rose Water is used as a **spray** for relaxed sore-throat. It is also used as an **injection** in leucorrhœa and in chronic gonorrhœa with advantage. 3 grs. to the ounce is used as a **nasal douche.** The powder has been used as a **snuff** in epistaxis. 30 to 60 grs. daily given successfully in fifty cases of acute tuberculosis.—*L.* '86, ii. 1003.

As an injection into nasal polypi.—*L.* '87, i. 543.

Warm Tannin **enemata** were given with success in the cholera at Naples.—*L.* '85, i. 352.

Glycerine of Tannin is used as a **paint** in relaxed throat; also for nasal discharges.

Useful in uterine hæmorrhage and diarrhœa.

Does not affect the secretion of the bile.—Dr. Rutherford.

Dose.—2 to 10 grs.

Incompatibles.—Mineral Acids, Alkalies, Salts of Antimony, Lead, Silver, and Persalts of Iron, the Vegetable Alkaloids, Gelatine, and Emulsions.

Prescribed in Water, and may be combined with the Protosalts (but not with the Persalts) of Iron. 4 grs. with ½ minim of Glycerine make a nice **pill.** Externally as a styptic, dissolved in Glycerine; in **ointments**, 40 grs. to 1 oz. 60 grs. to 1 oz. of Chalk make an astringent dentifrice.

Preparations.

GLYCERINUM ACIDI TANNICI.

Tannic Acid, 1; Glycerine, 4. Rub together, and then complete the solution by a gentle heat, not exceeding that of a water-bath.

(By weight 1 in 6, by measure 1 in 4½).

Sp. g. about 1·3. The colour is always lighter when made without heat.

Dose.—10 to 40 minims.

(Dutch, 1 and 5; Port., 1 and 9; Belg. and Fr. 1 and 5 of Glycerine of Starch; not in the others.)

SUPPOSITORIA ACIDI TANNICI.

Tannic Acid, 36 grs.; Oil of Theobroma, 144 grs. Rub the Tannic Acid with 44 grains of the Oil of Theobroma in a slightly-warmed mortar, and add them to the remainder of the Oil of Theobroma, previously melted at a low temperature: mix the whole thoroughly, and pour the mixture while it is fluid into suitable moulds of the capacity of 15 grains.

Each suppository will contain 3 grains of Tannic Acid.

Benzoated Lard and White Wax are now omitted.

SUPPOSITORIA ACIDI TANNICI C. SAPONE.

Tannic Acid, 36 grs.; Glycerine of Starch, 30 grs.; Curd Soap, in powder, 100 grs.; mix, and add Starch Powder sufficient (50 grs.) to form a mass, to be divided into 12 conical suppositories.

Each suppository contains 3 grs. of Tannic Acid.

The quantity of Glycerine of Starch is now reduced, and consequently less Starch powder is required.

Note.—Suppositories containing 10 grs. each are made as follows:—Tannic Acid, 60 grs.; Glycerine of Starch, 30 grs.; Curd Soap, 60 grs.; Starch, 10 grs.; mix and divide into 6. They keep well.

They should not be made with Gelatine.

TROCHISCI ACIDI TANNICI.

Lozenges made with Tannic Acid, Sugar, Gum Acacia, and Tincture of Tolu.

Each lozenge contains half a grain of Tannic Acid.

Dose.—1 to 6 lozenges.

T.H. 1½ grain in each, and made with Black Currant Paste.

(U.S. 1 grain in each.)

Not Official.

SUPPOSITORIUM ACIDI TANNICI C. OPIO.—Tannic Acid, 3 grs.; Powder of Opium, 1 gr.; Stearine, or Oil of Theobroma, 11 grs.: mix.

PESSARY OR VAGINAL SUPPOSITORY.—Tannic Acid, 10 grs.; Stearine sufficient to make 2 drms. For one suppository; used in leucorrhœa.

1 drm. of Tannic Acid with 7 minims of Glycerine, in a conical suppository, placed in the vagina, and plugged in with a sponge, effectually stops hæmorrhage.

SCHUSTER'S PASTILLES.—Tannic Acid, 30 grs.; Opium, 1 gr.; Glycerine, q. s. to form suitable cylinders for the male urethra.

CRAYONS DE TANNIN (Fr.).—Tannin, 20; Gum Acacia, 1 (both in powder): mix and make into a mass of pilular consistence by means of equal parts Glycerine and Water, then roll into cylinders of the size required.

UNGUENTUM ACIDI TANNICI, (U.S.).—Tannic Acid, 1; Benzoinated Lard, 9; mix.

UNGUENTUM ACIDI TANNICI C. OPIO, (*B.S.H.*).—Tannic Acid, 30 grs.; Powdered Opium, 30 grs.; Lard, 1 oz.

ACIDUM TARTARICUM.

TARTARIC ACID. DEXTROTARTARIC ACID.

A colourless crystalline Acid, $H_2C_4H_4O_6$, eq. 150, obtained from the Acid Tartrate of Potassium.

Solubility.—10 in 8 of Water; 1 in 5 of Rectified Spirit; 1 in 4½ of Glycerine; 1 in 60 of Ether; 1 in 40 of Absolute Alcohol; nearly insoluble in Benzol and Chloroform.

Tests.—100 grains neutralize 133 grains of Bicarbonate of Potassium. 25 grains dissolved in Water require for neutralization 330 grain-measures of the volumetric Solution of Soda. Its aqueous solution is not affected by Sulphuretted Hydrogen, and gives no precipitate with Solution of Sulphate of Calcium, or Oxalate of Ammonium—indicating absence of metallic contamination, Oxalic Acid, and Lime. If free from Lime it should leave no residue when burnt. It is distinguished from all other Acids by forming with strong solutions of neutral salts of Potassium a crystalline precipitate (a bitartrate).

Tartaric Acid is distinguished from Citric Acid by its power of decolorising a weak Solution of Chromate of Potassium, upon which Citric Acid has no action. Alcohol and other reducing agents must be absent.

(Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Norw., Port., Russ., Span., Swed., Swiss, and U.S.)

Medicinal Properties.—The same as Citric Acid, for which it was once substituted in saline mixtures.

Dose.—10 to 30 grains in Water.

Incompatibles.—Salts of Potash, of Lime, of Mercury, and of Lead, and the vegetable astringents.

When Citric Acid was very dear, Tartaric Acid was much employed to make saline draughts, and it frequently perplexed the dispenser, for if tho Bicarbonate of Potassium was added to a solution of Tartaric Acid, Bitartrate was immediately formed, and was precipitated, whereas if the Tartaric Acid was added to the Potassium Salt, it might bo added to the point of saturation, and remain perfectly soluble.

Used in the preparation of Sodii Citro-Tartras Effervescens.

ACONITI FOLIA.

ACONITE LEAVES.

HERB.

The fresh leaves and flowering tops of the perennial *Aconitum Napellus,* gathered when about one-third of the flowers are expanded. from plants cultivated in Britain.

(Belg., Dan., Dutch, Fr., Norw., Port., Russ., Span., and Swiss; not in the others.)

Medicinal Properties.—Anodyne, antiphlogistic, and antipyretic. Externally it relieves the pain of acute rheumatism and facial neuralgia. It diminishes expectoration in phthisis, and lessens the frequency of the pulse; it has also been found useful in tetanus.

Preparation.

EXTRACTUM ACONITI.

Take 112 pounds of fresh leaves and flowering tops, bruise them. press out the juice, heat it gradually to 130° F. (54·4° C.), and separate the green matter by a calico filter. Heat the strained liquor to 200° F. (93·3° C.) to coagulate the albumen, and again filter. Evaporate the filtrate by a water bath to the consistence of a thin syrup; then add to it the green colouring matter previously separated and passed through a hair sieve, and stirring the whole together assiduously, evaporate at a temperature not exceeding 140° F. (60° C.) to a pill consistence.

100 lbs. of plant produce 50 lbs. of juice = 7 lbs. extract, subject to variation.

Dose.—$\frac{1}{4}$ to 1 gr.

(Austr., Fr., Ger., Hung., Russ., and Swed., alcoholic from **root**; Belg.. juice from fresh **leaves** evaporated and mixed with an equal quantity of Alcohol, filtered and evaporated; Dan. and Norw., alcoholic from **herb**; Dutch, alcoholic from fresh **herb**; Fr., also hot aqueous infusion of dried **leaves**, evaporated; Port. and Swiss, alcoholic from dried **leaves**; Russ., also aqueous from **herb**; Span., juice from fresh **herb**, clarified and evaporated; also aqueous from dried **herb**; and alcoholic from dried **leaves**; U.S., treat the **root** with Alcohol and Tartaric Acid, evaporate to an extract, and add 5 per cent. of Glycerine; also Abstractum Aconiti and Extractum Aconiti Fluidum.)

Not Official.

SUCCUS ACONITI.—Aconite Herb Juice, 3; Rectified Spirit, 1: mix, and after seven days filter.

Dose.—15 to 20 minims.

ACONITI RADIX.

ACONITE ROOT.

The root of *Aconitum Napellus* collected in the winter or early spring before the leaves have appeared, and carefully dried. Cultivated in Britain or imported from Germany.

The root is annual, and is in perfection in the autumn. It deteriorates during the development of the stem and flowers in the spring and summer; but co-incident with this another root forms which arrives at maturity in the following autumn.

The P.B. describes the roots as usually crowned with the remains of the stem, although it rightly directs the roots to be gathered before the appearance of the stem. The best roots are crowned with the unopened stem-bud. In addition to the *A. napellus*, some quantities of Japanese Aconite roots have from time to time been used for the manufacture of the Pharmacopœia preparations.

(Austr., Belg., Fr., Ger., Hung., Port., Russ., Span., Swed. and U.S.; not in the others. Austr., Ger., Hung., Swed. and U.S. use the root *only*.)

Medicinal Properties.—Same as that of the plant, but possessed in a stronger degree. Internally, it renders the pulse slower but stronger, and reduces inflammation; externally, it relieves rheumatic and neuralgic pain.

Preparations.

LINIMENTUM ACONITI.

Aconite Root, in No. 40 powder, 20; Camphor, 1; Rectified Spirit, to percolate, 30; moisten the root with 20 oz. of the Spirit, and macerate in a closed vessel for three days, agitating occasionally; then transfer to a percolator, and when the liquid ceases to pass continue the percolation with more of the Spirit, allowing the fluid to drop into a receiver containing the Camphor until the product measures 30 oz. =(1 in 1½).

The strength of this preparation is decreased, but not to the extent of 2 to 3, although the percolate is increased from 20 to 30 oz. It was not the intention of the person who introduced this preparation that the whole of the alkaloids should necessarily be extracted, but rather that a very strong liniment should be made.

Applied with a camel's-hair pencil alone, or mixed, in equal proportions, with Soap Liniment or Compound Camphor Liniment, and rubbed on the part (but not upon an abraded surface), relieves acute neuralgia.

(Not in the foreign Pharmacopœias.)

TINCTURA ACONITI.

Aconite Root from plants cultivated in Britain, in No. 40 powder, 1; Rectified Spirit, to percolate, 8; macerate for forty-eight hours with three-fourths of the Spirit, agitating occasionally, pack in a percolator and let it drain, then pour on the remaining Spirit; when it ceases to drop press the marc and add Spirit to make 8. =(1 in 8).

The same strength as in 1867, but the root is confined to those cultivated in Britain.

B P. Dose.—5 to 15 minims; but it is better given in small doses and very frequently, ½ to 1 minim every ten minutes or quarter of an hour for two hours, then hourly (Ringer).

Half a minim in Water given every half-hour reduces abnormal temperature, and leads to free perspiration.

Five minims given every three or four hours, increasing the dose to 20 minims, succeeded in curing a case of neuralgia in the face, when every other remedy tried had failed.

Hydrophobia successfully treated by Tincture of Aconite.—*L.* '82, ii. 215.

P.G. maximum single dose (·5 gramme), 8½ minims; maximum daily dose (2 grammes), 35 minims.

Dr. Fleming's Tincture of Aconite was made the same strength as the present Liniment, 1 in 1½, but without tho Camphor.

(Austr., 1 **Root** in 10 Spirit; Hung., 1 **Root** and 5; Belg., 1 dried **Leaves** and 5; 1 fresh **Herb** and 1; Dan. and Norw., 1 dried **Herb** and 10; Fr., 1 dried **Leaves** and 5; Alcoolature 1 fresh **Leaves** and 1; also 1 fresh **Root** and 1; Ger., 1 **Root** and 10; Port., 1 dried **Leaves** and 5; also 1 **Root** and 5; and 1 fresh **Leaves** and 1; Russ., 1 dried **Herb** and 10; also 1 **Root** and 10; Span., 1 fresh **Leaves** and 1; Swiss, 1 dried **Leaves** and 5; also tho same with Spirit of Ether; U.S. **Root,** 4; Tartaric Acid, ·04; Alcohol to make 10. All by weight.)

Symptoms of poisoning by Aconite, violent purging, numbness of limbs.

Antidotes.—In case of poisoning by Aconite, the antidotes are emetics, Apomorphine $\frac{1}{10}$ grain, stimulants internal and external; Atropine or Belladonna, Digitalis, Nitrite of Amyl.

Atropine is antagonistic to the action of Aconitine on the heart.—*L.* '81, i. 74.

Not Official.

EXTRACTUM ACONITI RADICIS ALCOHOLICUM.—Austr., Fr., Ger., Hung., Russ., Swed. and U.S.

(Austr., Hung. and Russ. use 70 p. c. Alcohol; Fr., 60 p. c. Alcohol; Ger., diluted Alcohol; Swed., 65 p. c. Alcohol; U.S., 94 p. c. Alcohol.)

Dose—$\frac{1}{6}$ to $\frac{1}{2}$ gr.

Ger. maximum single dose, $\frac{1}{3}$ grain; maximum daily dose, 1½ grains.

CHLOROFORMUM ACONITI.—Powdered Root, 20; Chloroform to percolate, 20. Painted on with a camel's-hair brush, relieves neuralgia in almost every form.

LINIMENTUM ACONITI COMPOSITUM.—Chloroform of Aconite 1, Liniment of Aconite 7, sprinkled on impermeable piline and applied for neuralgia.

TROCHISCI ACONITI (*T.H.*).—Each lozenge contains $\frac{1}{2}$ a minim Tincture of Aconite. Dose, one lozenge every half-hour or hour in tonsilitis and febrile affections of the throat.

ACONITINA.

ACONITINE.

The P.B. describes Aconitine as an alkaloid obtained from Aconite Root, occurring as a white, usually amorphous, solid, and gives a process for its manufacture.

A comparison, by Schneider (*Y.B.P.* '82, 225), of this process with others, resulted in a yield of ·002 per cent. for the P.B., against ·339 per cent. for the Duquesnel process, the product from the latter being in well-developed crystals. The loss in the P.B. process being no doubt due to the prolonged high temperature employed.

Aconitum napellus yields (practically) **Aconitine**, an alkaloid split up by Alcoholic Potash into Benzoic Acid and Aconine. *Aconitum ferox* yields (practically) **Pseudaconitine**, split up into Veratric Acid and Pseudaconine, the difference between Aconine and Pseudaconine being very slight, and according to some authorities doubtful. *A. japonicum* yields Jap-Aconitine, decomposing under the same treatment into Benzoic Acid and Jap-Aconine.—*P.J.* xi. 2.

Evidence as to the toxic effects produced by commercial samples of Aconitine is somewhat contradictory, but it seems probable that the crystallised alkaloids are tolerably uniform when pure, and that the observed differences between the various samples have been due to the presence of less active alkaloids, and the decomposition products o

Aconitine itself, Aconine having only about $\frac{1}{300}$ the toxic effect of the Aconitine from which it is derived.

It would appear from the foregoing that for uniformity in so powerful a medicine, the Pharmacopœia should order a pure crystalline product such as can be obtained by the Duquesnel process, from a definite species of Aconite. *A. napellus* is in general use on the Continent, but the well-known brand "English Aconitine" possesses all the characters of the alkaloid from *A. ferox.*

Tests.—Pure Crystallised Aconitine should dissolve quite colourless in concentrated Sulphuric Acid, and if a drop of Simple Syrup be added to this solution no red colour should be produced even after standing some hours.

Pseudaconitine can be distinguished from Aconitine by the beautiful purple red colour produced on adding a solution of Caustic Potash in absolute Alcohol to the yellow residue obtained by evaporating a small quantity of the alkaloid with a few drops of fuming Nitric Acid. It can also be recognised by other tests dependent upon the formation of Veratric Acid derivatives—which Aconitine does not yield.

The decomposition Aconines are readily detected by the red colouration with strong Sulphuric Acid and Sugar, also by an increased solubility, but the best test for purity is the melting-point.

Aconitine Cryst. should not melt below 350° F.; a sample in large crystals melted at 366° F. (185·5° C.).

Aconitine "German Amorphous," a sample melted at 160° F.

Pseudaconitine (English) melted at 222° F.; (foreign) at 170° F.

Solubility.—1 in 2600 of cold Water; 1 in 40 of Rectified Spirit; 1 in 1 (or less) of Chloroform; and 1 in 45 of Ether.

(Fr., Duquesnel process; Span., similar; both are crystalline products; Belg., similar to Brit.; Hung. and Russ. specify "German Aconitine"; Port. and Swiss, indefinite, must obviously contain Aconines.)

Medicinal Properties.—It relieves acute nervous pain when rubbed on the part in the form of ointment, producing a tingling sensation, followed by numbness. Care must be taken that it does not come in contact with a mucous surface or abraded skin.

It has been given with marked benefit in trigeminal neuralgia, and to relieve the pain of *acute* rheumatism and gout.

As the doses which have been given of "German Amorphous" Aconitine are about ten times that of the crystallised alkaloid, great care must be taken in prescribing and dispensing to define the variety intended.

As a pure crystalline Aconitine would probably be fatal to an adult in a dose of 3 milligrammes ($\frac{1}{20}$ grain), the maximum dose should not exceed $\frac{1}{10}$ milligramme pro dosi, or $\frac{5}{10}$ milligramme per diem, and the commencing dose should be smaller.

Aqueous solutions are prone to decomposition; solutions aqueous or alcoholic should therefore be slightly acidified with **Hydrochloric Acid**, or crystallised **Nitrate of Aconitine** should be used.—*P.J.* xvi. 802.

Preparation.

UNGUENTUM ACONITINÆ.

Aconitine, 8 grs.; Rectified Spirit, $\frac{1}{2}$ drm.; dissolve and add Benzoated Lard, 1 oz.; mix. =(about 1 in 60).

Benzoated Lard now used in the place of Lard.

(Span., Pomada de Aconitina.—Aconitine 1, Olive Oil 2, Lard 40; not in the others)

Not Official.

OLEATUM ACONITINÆ.—Aconitine, 10 grs.; Oleic Acid, 1 oz.; dissolve.

Dr. Shoemaker states that this has a slight local action, and it can be used in mild cases of neuralgia.—*B.M.J.* '84, ii. 750.

ACTÆA RACEMOSA.

See CIMICIFUGÆ RHIZOMA.

ADEPS PRÆPARATUS.

PREPARED LARD.

Syn. AXUNGIA, *Edin.*

The purified fat of the Hog, Sus scrofa.

Take of the internal fat of the abdomen of the hog, perfectly fresh, 14 pounds. Remove as much of the external membranes as possible, and suspend the fat so that it shall be freely exposed to the air for some hours; then cut it into small pieces, and beat these in a stone mortar until they are thus, or by some equivalent process, reduced to a uniform mass, in which the membranous vesicles are completely broken. Put the mass thus produced into a vessel surrounded by warm water, and apply a temperature, not exceeding 130° F. (54·4° C.), until the fat has melted and separated from the membranous matter. Finally strain the melted fat through fine flannel.

This process is an improvement on that of 1867 Pharmacopœia.

Solubility.—1 in 22 of Ether and 1 in 16 of Oil of Turpentine.

Begins to melt at 95° F., but is not clear below 117° F.

Lard is not adulterated as a rule, but it was frequently prepared in the country with little care, and consequently bad in colour and odour; now, however, it is made upon a very large scale by London manufacturers, of superior quality.

It is apt to grow rancid by keeping, and mouldy if it contains water.

It is the basis of several ointments.

Tests.—Has no rancid odour; dissolves entirely in Ether. Distilled Water in which it has been boiled when cooled and filtered gives no precipitate with Nitrate of Silver, and is not rendered blue by the addition of solution of Iodine—indicating absence of Salt and Starch.

(Austr., Belg., Dan., Dutch, Fr. (Axonge), Ger., Hung., Norw., Port. (Banha), Russ., Span. (Grasa de Cordo), Swed., Swiss, and U.S.)

Medicinal Properties.—Emollient. Added to poultices to prevent them drying and sticking to the skin. Used also in scabies, and to destroy pediculi.

Used in the preparation of Emplastrum Cantharidis, and the following ointments:—Mercury, Nitrate of Mercury, Iodine, and Turpentine.

Several substitutes for lard have been proposed, and among them certain products obtained from petroleum; and more recently a fat obtained from sheeps' wool, and sold under the name of Lanoline, which has great penetrating powers.

See LANOLINE, PARAFFINUM DURUM, and PARAFFINUM MOLLE.

Preparation.

ADEPS BENZOATUS.

Prepared Lard, 16 oz.; Benzoin, in powder, 140 grs.; heat together in a water bath for two hours, stirring occasionally, and strain; lastly, stir till cold. Keeps well. The quantity of Benzoin is now reduced.

(Out of 140 grs. of Siam Benzoin in tears, 46 grs. remain undissolved.)

(Brit., Norw., Russ., Swed. and U.S., 2 Benzoin and 100 Lard; Swiss, 2·5 and 100; Span., 3 and 100; Austr. and Belg., 4 and 100; Fr., 5 Tincture in 1000. Not in the others.)

Benzoated Lard is irritating and should not be used for **eye ointments.**

Used for making the following ointments:—Aconitine, Atropine, Belladonna, Calamine, Chrysarobin, Galls, Calomel, Iodoform, Acetate of Lead, Iodide of Potassium, Savin, Simple, Stavesacre, Sulphur, and Zinc.

Not Official.

UNNA'S SALVE MULLS.—The bases of these are hog's lard and beef suet (singly or combined), with which are incorporated various medicaments, and spread on muslin. —*L.M.R.* '81, 452.

Not Official.

ADONIS.

The leaves and stalks of *Adonis vernalis.*

Medicinal Properties.—A cardiac tonic.

Useful in mitral and aortic regurgitation.—*L.* '88, ii. 1012.

Dose.—2 to 6 grains in **powder**, or as an **infusion** or **tincture.**

ADONIDIN.—A glucoside, soluble in Water and Alcohol.

Dose.—$\frac{1}{10}$ to $\frac{1}{3}$ grain.

ÆTHER.

ETHER.

Syn. Æther Sulphuricus, *Edin. Dub.*

A volatile and inflammable liquid, prepared from Alcohol.

Contains not less than 92 per cent. by volume of pure Ether $(C_2H_5)_2O$, eq. 74.

Solubility.—1 in 10 of Water; unites in all proportions with Rectified Spirit.

Water dissolves a tenth of its volume of Ether, and reciprocally Ether takes up about the same proportion of Water. It is colourless, of a strong and characteristic odour, hot and pungent in taste. It evaporates speedily in the open air, with the production of considerable cold. When good, it evaporates from the hand without leaving a disagreeable odour. It boils below 105° F. (40·5° C.), and its vapour is very heavy and very inflammable. It dissolves Corrosive Sublimate, Red Iodide of Mercury, Iodine and Bromine freely; Sulphur and Phosphorus sparingly. It is also a solvent of the volatile and fixed oils, many resins and balsams, caoutchouc, and most of the organic vegetable alkaloids. It does not dissolve Potash and Soda, in which respect it differs from Alcohol.

Tests.—Sp. g. (at 92 p. c.) ·735. 50 measures agitated with an equal volume of Distilled Water are reduced to 45 by an absorption of 10 per cent.

Note.—Methylated Ether, other than sp. g. ·717 (purified), *leaves an odour after it has evaporated.*

(Austr., Dan., Norw., and Swed., sp. g. ·725; Belg., sp. g. ·720; Dutch, sp. g. ·722—·725; Fr., sp. g. ·724; Hung. sp. g. ·724—·728; Ger. and Russ., sp. g. ·725—·728; Port., sp. g. ·728; Span. (Eter), sp. g. ·758; Swiss, sp. g. ·725—·730; U.S., sp. g. ·750.)

Medicinal Properties.—It is a powerful, diffusible stimulant, antispasmodic, and narcotic, and is of great use in dyspnœa and gastralgia. Used to expel flatus from the stomach, and to allay pain and cramp in that organ. In nausea it is given as a cordial. It excites secretion from the mucous surfaces of the alimentary tract, and, as it stimulates the pancreas, it is sometimes given with Cod Liver Oil.

Dose.—20 to 60 minims.

When used **hypodermically** for heart failure the dose is 15 to 30 minims.

Best prescribed as Spirit of Ether, which mixes readily with water.

Used in the preparation of Collodium, Collodium Flexile, Extractum Filicis Liquidum, Extractum Mezerei Æthereum, Extractum Stramonii, and Tinctura Chloroformi et Morphinæ.

Preparations.

ÆTHER PURUS. PURE ETHER. *Syn.* OXIDE OF ETHYL.

Ether, $(C_2H_5)_2O$, free from Alcohol and Water.

Shake 40 of Ether with 20 of Water in a bottle, and after a few minutes decant the Ether, mix it with 20 of fresh Water, shake, and again decant; put the decanted Ether into a retort, with 1 of recently burnt Lime, and 4 of dried Chloride of Calcium; attach closely a receiver, and let them stand twenty-four hours, then distil with a gentle heat.

Boils at 95° F. (35° C.); density of Vapour, 2·565.

Tests.—Sp. g. not exceeding ·720. When shaken with a fourth of its bulk of Solution of Iodide of Potassium and a little Starch paste, little or no blue colour is produced.

Unless the Solution of Iodide of Potassium is very dilute, even the purest Sulphuric Ether will give the blue colour.—*P.J.* xvii. 842.

If free from Water it will dissolve in an equal volume of Bisulphide of Carbon; when free from Alcohol it mixes without turbidity with twice its volume of Oil of Copaiba.—Allen.

If kept in white glass bottles and exposed to the light it produces ozone. It should therefore be kept in the dark.

(Austr. and U.S., sp. g. ·725; Fr. and Span., sp. g. ·720; Hung., sp. g. ·724—·728: see also under Æther.)

Medicinal Properties.—Ether was first used as an anæsthetic for capital operations in 1846, and Pure Ether is still preferred by some to Chloroform, as it has a much less depressing effect upon the heart, and may be used for prolonged operations.

It has been used as a **spray** for obtaining local anæsthesia from the cold produced by rapid evaporation of the Ether. The lower the boiling point of the Ether the more complete is the anæsthesia; therefore Methylated Ether, sp. g. ·717, is preferable.

SPIRITUS ÆTHERIS. The HOFFMAN'S ANODYNE of the Continental Pharmacopœias.

Ether, 1; Rectified Spirit, 2. =(1 in 3).

Sp. g. ·809.

Dose.—30 to 90 minims.

(Austr., 1 and 3, sp. g. ·820; Dan., Ger., Hung., Norw. and Swed., 1 and 3, sp. g. ·806—·811; Belg., Æther Sulphuricus Alcoholicus, 468 in 1000, sp. g. ·791—·795; Dutch, Æther cum Spiritu, 1 and 1, sp. g. ·775—·782; Fr., Éther Officinal Alcoolisé, 1 and 1, sp. g. ·783; Port., Ether Alcoolisado, 7 and 3; Russ., 1 in 3, sp. g. ·800; Span., Eter Sulfurico Alcoholizado, 4 and 1; Swiss, 1 and 3, sp. g. ·810—·816; U.S., 3 in 10. All by weight.)

Used in the preparation of Tinctura Lobeliæ Ætherea.

SPIRITUS ÆTHERIS COMPOSITUS. *B.P. Syn.*—Hoffman's Anodyne.

Gradually mix 36 fl. oz. Sulphuric Acid with 40 fl. oz. Rectified Spirit, and let the mixture stand twenty-four hours; then distil until the fluid in the retort begins to blacken. Shake the distillate with Lime Water to neutralize any acid, and remove the supernatant liquor, and expose it to the air for about twelve hours. Pour 3 fl. drs. of the resulting liquid into a mixture of 8 fl. oz. Ether and 16 fl. oz. Rectified Spirit.

Dose.—30 to 120 minims.

(U.S., Stronger Ether, 30; Alcohol, 67; Ethereal Oil, 3. Not in the others.)

Not Official.

ÆTHER METHYLATUS.—Sp. g. ·717. Prepared from Methylated Spirit. It can be purified to such an extent by washing and redistillation as to be scarcely distinguishable from that made from Pure Spirit. The Methylic Ether being so extremely volatile is almost wholly lost during the purification.

An Ether, sp. g. ·715, can be obtained in limited quantity by careful working; occasionally samples are drawn over at ·713, in cold weather.

Medicinal Properties.—It is largely employed as a **spray** for local anæsthesia, as well as for **inhalation**. As in the case of "Methylated Chloroform," the impurities from the Wood Spirit employed in the manufacture can be so completely eliminated as to allow of its substitution in many cases.

Methylated Ether, sp. g. ·720, is *not* so suitable as the above, for the **spray** because it volatilises less rapidly, and for **inhalation** because it is not sufficiently purified. Methylated Ether can be made more volatile for use with the spray by the addition of 20 p. c. of a light Petroleum Ether.

SPIRITUS ÆTHERIS MURIATICUS.

Syn.—Sp. Salis Dulcis; Clutton's Febrifuge Spirit.

A colourless liquid. Sp. g. ·860.

A very old preparation, and is still prescribed for feverish symptoms.

Dose.—30 to 60 minims.

(Dan. and Norw., Æther Chloratus Spirituosus, and Swiss, Spiritus Ætheris Chlorati, sp. g ·838—·842.)

ÆTHER ACETICUS.

ACETIC ETHER.

$C_2H_5C_2H_3O_2$, eq. 88.

A colourless liquid, with an agreeable ethereal odour.

Tests.—Sp. g. about 0·900. Boiling point 166° F. (74·4° C.).

Note.—It would be an improvement if, instead of boiling point 166° F., it stated "not less than 90 p. c. should distil between 155° and 160° F., the bulb of the thermometer being placed as usual in the neck of the fractionating flask."

10 c. c. of Pure Acetic Ether shaken with 10 c. c. of saturated solution of Chloride of Calcium will lose ·2 c. c., each additional loss of ·1 c. c. indicates 1 per cent. of impurity.—*P.J.* xiii. 781.

In six samples examined we found 6·0, 6·5, 11·5, 15·0, 60·0 and 63·0 p. c. of impurity.

A good commercial specimen should contain over 90 p. c. of Acetic Ether.

When 10 c. c. are agitated with an equal volume of Water in a graduated test-tube, the upper, ethereal layer, after its separation should measure not less than 7 c. c. (Squibb's *Ephemeris*, '84, 512).

U.S. and Ger. allow only a loss of 10 p. c. by this test.

Solubility.—About 1 in 9 of Water. Soluble in all proportions in Rectified Spirit and in Ether.

(Austr., Hung. and Russ., sp. g. ·900; Belg., sp. g. ·890; Dan., Dutch, Ger., Norw. and Swed., sp. g. ·900—·904; Fr. sp. g. ·915; Port., sp. g. ·920; Span., sp. g. ·916; Swiss, sp. g. ·890—·904; U.S., sp. g. ·889—·897.)

Medicinal Properties.—Antispasmodic and carminative. It is also used as a sedative **inhalation** in irritation of the larynx, 30 minims in a pint of Water.

Dose.—20 to 60 mins.

Used in the preparation of Liquor Epispasticus.

Not Official.

ÆTHYL BROMIDUM.

BROMIDE OF ETHYL. HYDROBROMIC ETHER.

C_2H_5Br.

A volatile, colourless liquid, which is not readily inflammable. It is best prepared by acting upon Bromide of Potassium with Sulphuric Acid in the presence of Alcohol, as described in the French Codex.

Sp. g. 1·420. Boils at 40° C. (104° F.)

Its liability to decomposition may be prevented by the addition of Alcohol, and by exclusion of light and air.

Solubility.—1 in 70 of Water, mixes in all proportions with Rectified Spirit and Ether.

It should give no reaction with pure Sulphuric Acid. When evaporated should leave no residue. Its vapour should have a pleasant ethereal odour.

(Fr., Éther Brômhydrique; not in the other Pharmacopœias.)

Medicinal Properties.—It is a local and general anæsthetic, more rapid in its action than Chloroform, and occasionally used in conjunction with it. It is useful in minor surgery, also in obstetric practice and in dental operations.

It should be administered in the same manner as Ether, and is very prompt in its action. It should not be given in prolonged operations or in renal disease. Has been used as a spray to produce local anæsthesia.—*L.M.R.* '80, 213; '87, 327: *T.G.* '85, 383; '86, 833; '87, 860.

Strongly recommended in dental operations.—*L.* '89. i. 848.

A **solution**, 1 in 200 of Water, in angina pectoris, dose ½ to 2 ozs., *M.A.* '87, 24.

Not Official.

ÆTHYL IODIDUM.

IODIDE OF ETHYL. HYDRIODIC ETHER.

C_2H_5I.

A colourless, volatile, heavy, and non-inflammable liquid, prepared by acting upon Alcohol with Iodine and Amorphous Phosphorus.

Has an agreeable ethereal odour and pungent taste.

Sp. g. 1·943. Boils at 79° C. (175° F.).

It soon acquires a reddish brown colour on exposure to light; but if no deeper than a pale wine colour it may be disregarded (*Squibb*).

The change of colour can be prevented by putting in the bottle a globule of Mercury, also by adding to each ounce vial, 5 c.c. ⅕n. solution of Soda, which will absorb any free Iodine which may be formed.

Solubility.—1 in 440 of Water; mixes in all proportions with Rectified Spirit.

(Fr., Éther Iodhydrique; not in the other Pharmacopœias.)

Medicinal Properties.—The Iodine is very rapidly absorbed from this substance. It is used as an **inhalation**; 15 to 20 drops inhaled through the nose from a wide-mouthed bottle is more accurate and economical than dropping it on a handkerchief. It is said not to weaken the digestive organs but rather to have a tonic effect. It has been inhaled with success in chronic bronchitis and asthma, and for the relief of dyspnœa; also in secondary and tertiary syphilis as an adjunct to the administration of Iodide of Potassium.—Squibb's *Ephemeris*, '88; *B.M.J.* '89, ii. 1216; *P.J.* xix. 46.

It is also used as a vesicant and as an application to the uterus.—*L.* '85, ii. 755.

ÆTHERIS NITROSI SPIRITUS.

See SPIRITUS ÆTHERIS NITROSI.

Not Official.

AGARICUS ALBUS.

AGARIC OF THE LARCH. WHITE OR PURGING AGARIC.

A species of mushroom found growing on the larch. As found in commerce it is deprived of its outer coat, and is a light white spongy mass, easily rubbed to a powder on a sieve.

(Belg., Fr., Port. (Agarico Brancho), Russ. and Span.; not in the other Pharmacopœias.)

Medicinal Properties.—Has been used with success in night sweating of phthisis, checking cough and promoting sleep; also in hæmoptysis. It has a strong cathartic action.—*Pr.* xxix. 321; *M.T.* '81, ii. 442; *T.G.* '88, 41, 371.

Dose.—5 to 30 grains of the powder, given in jam.

AGARICIN (Agaricic Acid). The active principle. A white crystalline powder. Generally given with Dover's powder in a pill.

Solubility.—1 in 140 of Rectified Spirit; practically insoluble in Water and in weak Alcohol.

Dose.—$\frac{1}{12}$ to $\frac{1}{6}$ grain.

It should not be given hypodermically.—*L.M.R.* '84, 118.

ALBUMEN OVI.

See OVI ALBUMEN.

ALCOHOL AMYLICUM.

AMYLIC ALCOHOL.

Syn. Fousel Oil; Hydrate of Amyl.

Amylic Alcohol, $C_5H_{11}HO$, with a small proportion of other spirituous substances.

A colourless liquid with a characteristic odour, obtained as a by-product in the distillation of crude Spirit.

It should be redistilled, and the product passing over at 262° to 270° F. (128°—132° C.) be alone collected for use.

Solubility.—1 in 60 of Water; in all proportions in Alcohol, Ether, and Essential Oils.

Test.—Sp. g. ·818.

(Belg. sp. g. ·818; boils at 132° C.)

Used in the preparation of Amyl Nitris and Sodii Valerianas—*Brit. Pharm.*; also as a solvent in proximate organic analysis.

ALCOHOL ETHYLICUM.

ETHYLIC ALCOHOL.

Syn. Absolute Alcohol.

C_2H_5HO.

A colourless liquid, prepared by dehydrating Rectified Spirit and distilling it, and containing one, or at most two per cent. of Water.

Tests.—Sp. g. ·797—·800. Entirely volatilized by heat; not rendered turbid when mixed with Water; does not cause anhydrous Sulphate of Copper to assume a decided blue colour, even after the two have been well shaken together.

(Belg., Span. and U.S., sp. g. ·794; Dan., sp. g. ·812—·815; Fr., sp. g. ·816; Swiss, sp. g. ·800—·810; not in the others.)

Used in the preparation of Chloroform and Liquor Sodii Ethylatis.

Not Official.

ALCOHOL METHYLICUM.

Syn. Rectified Pyroxylic Spirit, Wood Spirit, Wood Naphtha.

A product of the destructive distillation of wood, which has been submitted to various processes of rectification.

A colourless liquid with a peculiar odour.

Sp. g. about ·803.

It is without action on Litmus; is not rendered turbid by admixture with water; free from smoky taste.

It mixes readily with Water, Ethylic Alcohol, Chloroform, and Ether.

It dissolves Fats and Volatile Oils.

Medicinal Properties.—Narcotic, sedative, and anti-emotic. It palliates the cough and lessens the febrile excitement of phthisis. It has been mixed with chloroform for use as an anæsthetic (Regnauld's Anæsthetic Mixture). *See* Chloroform.

METHYLIC ETHER.—It is gaseous at ordinary temperatures, but is condensed by cold and pressure to a liquid boiling at —20° C. (—4° F.). A solution of this in Ethylic Ether is useful for producing local anæsthesia.

ALOE BARBADENSIS.

BARBADOES ALOES.

The juice, when inspissated, which flows from the transversely-cut bases of the leaves of *Aloe vulgaris;* imported from Barbadoes and the Dutch West Indian Islands, and known in commerce as Barbadoes and Curaçoa Aloes.

Solubility.—In Water, 75 per cent. Almost entirely soluble in proof Spirit.

A test for the presence of Aloes (Barbadoes, Socotrine, and others) in Pharmaceutical Preparations. *See P.J.* xv. 633.

It is found by experiment that the aqueous extract is far more active than is the resinous portion of Aloes; the Barbadoes Aloes containing a larger amount of this than the Socotrine, is perhaps the reason why the Barbadoes is the more purgative; thus, 2 grs. are equal to 3 grs. of Socotrine.

(Belg., Fr., and Port.; not in the others.)

Medicinal Properties.—Purgative, acting chiefly on the large intestine. Employed as an enema in dislodging ascarides from the rectum, also as a stimulating cathartic in the constipation of amenorrhœa.

Dose.—2 to 4 grs.

Used in the preparation of Aloin, Pil. Cambogiæ Comp., Pil. Colocynthidis Comp., and Pil. Colocynthidis et Hyoscyami.

Preparations.

ENEMA ALOES.

Aloes, 40 grs.; Carbonate of Potassium, 15 grs.; Mucilage of Starch, 10 oz.; mix for one enema.

10 grs. are found enough generally.

Note.—Enema Aloes can be made with either Aloe Barbadensis or Aloe Socotrina.

EXTRACTUM ALOES BARBADENSIS.

Barbadoes Aloes, 16 oz. in small pieces, thoroughly mixed with 1 gallon (=160 oz.) of boiling Distilled Water, allowed to stand for twelve hours, and the clear liquor evaporated to dryness.

Dose.—1 to 3 grs. British Ph. 2 to 6 grs.

(100 parts of Aloes yield 75 parts of extract.)

PILULA ALOES BARBADENSIS.

Barbadoes Aloes, in powder, 2; Hard Soap, in powder, 1; Oil of Caraway, ⅛; Confection of Roses, 1. Mix. =(1 in 2).

Dose.—5 to 10 grs.

PILULA ALOES ET FERRI.

Barbadoes Aloes, in powder, 2; Sulphate of Iron, 1½; Compound Powder of Cinnamon, 3; Confection of Roses, 4. Mix. (6 of Confection are required.) =(about 1 in 6).

The Sulphate of Iron is said to heighten the action of Aloes.

Dose.—5 to 10 grs.

(U.S., Purified Socotrine Aloes, 1; Dried Sulphate of Iron, 1; Aromatic Powder, 1; Confection of Roses, q. s.: Ger. and Swiss, Cape Aloes, 1; Dried Sulphate of Iron, 1; Alcohol, q. s.; not in the others.)

Not Official.

PILULA ALOES DILUTA.—Marshall Hall's Pill. Take of Barbadoes Aloes 4 oz., dissolve in water and strain, then add 4 oz. Extract of Liquorice, 4 oz. Treacle, 4 oz. Hard Soap thinly sliced; mix and evaporate to a pill consistence.

Dose.—3 or 4 grains.

ALOE SOCOTRINA.

SOCOTRINE ALOES.

The juice, when inspissated, which flows from the transversely-cut bases of the leaves of *Aloe Perryi*, and probably other species.

Imported principally by way of Bombay and Zanzibar, and known in commerce as Socotrine and Zanzibar Aloes.

Solubility.—In Water, 50 per cent.; the residue is pretty well inert; almost entirely soluble in Proof Spirit.

(Austr., Belg., Port., Russ., Span. (Acibar), Swiss and U.S.; Cape Aloes is Official in Austr., Belg., Dutch, Fr., Ger., Hung., Norw., Port., Russ., Span., Swed. and Swiss; Dan., various species.)

Medicinal Properties.—Purgative, but slow in action. Given in mesenteric disease and distended bowels. Although the purgative property acts chiefly on the lower portion of the intestinal canal, it produces on the upper part tonic and stomachic effects, when small doses only are given. One grain, with ⅓ gr. Extract of Nux Vomica, is an excellent **pill** for this purpose and for relieving chronic dyspepsia. Aloes, combined with Rhubarb, Soap and Scammony, where there is a defective secretion of bile; with Iron and Myrrh for amenorrhœa.

Aloes were formerly supposed to aggravate Hæmorrhoids, but the Aqueous Extract commonly given in pills, and the Compound Decoction are free from objection.

In very large doses is a powerful hepatic stimulant. It renders the bile more watery, but at the same time increases the secretion of the biliary matter by the liver.—Dr. Rutherford.

Dose.—2 to 6 grs.

Used in the preparation of Aloin, Extractum Colocynthidis Co., Pilula Rhei Co., and Tinctura Benzoini Co.

Preparations.

DECOCTUM ALOES COMPOSITUM.

Extract of Socotrine Aloes, 1; Myrrh, ½; Saffron, ½; Carbonate of Potassium, ½; Extract of Liquorice, 4; Compound Tincture of Cardamoms, 30; Distilled Water, a sufficiency. Reduce the Extract of Aloes and Myrrh to coarse powder, and put them, together with the Carbonate of Potassium and Extract of Liquorice, into a suitable covered vessel with 40 of Distilled Water, boil gently for five minutes, then add the Saffron: let the vessel with the contents cool, then add the Tincture of Cardamoms, and covering the vessel closely, allow the ingredients to macerate two hours; finally strain through flannel, pouring as much Distilled Water over the contents of the strainer as will make the strained product measure 100.

4·375 grs. Extract of Aloes in 1 fl. oz. = (1 in 100).

Dose.—½ to 2 oz. as a mild cathartic, tonic, and antacid. Known to the public as the Baume de Vie.

It is noticed that much of the bitterness disappears on keeping.

DECOCTUM ALOES COMPOSITUM "SQUIRE." The same as the above formula, except that Fluid Extract of Liquorice, 10, is used in the place of Extract of Liquorice, 4. Sp. g. about 1·012.

The fluid extract is much better than the solid extract for covering the taste of Aloes; there is a marked difference in the taste of the two preparations, even when they practically contain the same amount of Liquorice. It is a most valuable aperient; 1 oz. or 1½ oz., equal to 6 grs. Aloes, act naturally without griping, whereas 3 grs. of Aloes in a pill will probably purge and gripe too. A paper on Aloes (*Medical Times and Gazette*, Jan. 4, 1868) records the fact, that a very much larger dose of Aloes can be given in solution than in the solid form.

ENEMA ALOES *in the British Pharmacopœia occurs under both kinds of Aloes, indicating that either may be used.*

Aloes, 40 grs.; Carbonate of Potassium, 15 grs.; Mucilage of Starch, 10 oz.; mix for one enema.

As an anthelmintic 3 to 4 ounces only should be used.

EXTRACTUM ALOES SOCOTRINÆ.

Socotrine Aloes, 16 oz.; thoroughly mixed with one gallon (=160 oz.) of boiling Distilled Water, allowed to stand for twelve hours, and the clear liquor evaporated to dryness.

Dose.—1 to 3 grs. Brit. Ph. 2 to 6 grs.

(100 parts of Aloes yield 50 parts extract.)

The extract being more active than the Aloes, a smaller pill can be given, and it has the advantage of acting more pleasantly.

(Austr., Belg., Dan., Dutch, Ger., Hung., Norw., Russ., Swed., Swiss, and U.S.; not in the others.)

U.S. has Aloe Purificata, but that is an Alcoholic Extract.

PILULA ALOES SOCOTRINÆ.

Socotrine Aloes in powder, 2; Powdered Hard Soap, 1; Volatile Oil of Nutmeg, $\frac{1}{8}$; Confection of Roses, 1. Mix. =(1 in 2).

Dose.—5 to 10 grs.

(Belg., Fr. and U.S., Aloes and Soap only, 1 in 2; Swiss, Aloes 1, Extract of Aloes 1, Soap 1; not in the others.)

PILULA ALOES ET ASAFŒTIDÆ.

Socotrine Aloes in powder, 1; Asafœtida, 1; Powdered Hard Soap, 1; Confection of Roses, about 1, or a sufficiency. ($\frac{1}{4}$ Confection is sufficient). Mix. =(1 in 4).

Cathartic and antispasmodic.

Dose.—5 to 10 grs.

(U.S., 1 in 3, omitting Conf. Rosæ; Belg. and Span., Pilulæ Fulleri, made with Aloes, Asafœtida, and other ingredients; not in the other Pharmacopœias.)

PILULA ALOES ET MYRRHÆ.

Socotrine Aloes, 2; Myrrh, 1; Dried Saffron, $\frac{1}{2}$; Treacle, 1; Glycerine a sufficiency. Mix. =(about 1 in 3).

Treacle and Glycerine have been substituted for Confection of Roses.

Stimulant and cathartic.

The formula for Pil. Rufi in 1557 was Aloes, 2; Myrrh, 1; Saffron, 1; White Wine, a sufficiency.

Dose.—5 to 10 grs.

(Austr., Belg., Port. and Swed., similar to Brit.; U.S., with Aromatic Powder in place of Saffron; not in the other Pharmacopœias.)

TINCTURA ALOES.

Socotrine Aloes in coarse powder, 1; Extract of Liquorice, 3; Proof Spirit, a sufficiency; macerate seven days in 30 of the Spirit, agitating occasionally; filter and add sufficient Proof Spirit to make 40. =(1 in 40).

Dose.—1 to 2 drms.

(Belg., 1 in 5; Dutch, Fr., Ger., Russ., Span. and Swiss, 1 and 5; Hung. and Port., 15 in 100; Swed. and U.S., 1 and 10: all are by weight.)

VINUM ALOES.

Socotrine Aloes, $1\frac{1}{2}$ oz.; Ginger in coarse powder, 80 grs.; Cardamom Seeds, bruised, 80 grs.; Sherry, 40 oz.; digest seven days, filter, and make up with Sherry to 40 oz.

About 2 grs. in each fluid drachm=(1 grain in $26\frac{2}{3}$ minims).

Dose.—1 to 2 drms.

(U.S., Purified Aloes, 6; Cardamoms, 1; Ginger, 1; stronger White Wine to make 100 by weight; not in the others.)

Not Official.

TINCTURA ALOES COMPOSITA (Elixir ad longam vitam).

Belg.—Aloes, 20; Agaric, 3; Gentian, 3; Rhubarb, 3; Zedoary, 3; Saffron, 2; Electuarium Theriacale, 3; Alcohol (50 p. c.), 1000.

Fr.—Aloes, 20; Agaric, 2·5; Gentian, 2·5; Rhubarb, 2·5; Zedoary, 2·5; Saffron, 2·5; Electuarium Theriacale, 2·5; Alcohol (60 p. c.), 1000.

Ger.—Aloes, 30; Gentian, 5; Rhubarb, 5; Zedoary, 5; Saffron, 5; Alcohol (68 p. c.), 1000.

Russ.—Aloes, 45; Agaric, 5; Gentian, 5; Rhubarb, 5; Zedoary, 5; Saffron 5; Alcohol (70 p. c.) 1000.

Span.—Aloes, 35; Agaric, 4; Gentian, 4; Rhubarb, 4; Zedoary, 4; Saffron, 4; Electuarium Theriacale, 4; Alcohol (60 p. c.), 1730.

Swiss.—Aloes, 9; Agaric, 1; Gentian, 1; Rhubarb, 1; Zedoary, 1; Saffron, 1; Myrrh, 1; Electuarium Theriacale, 1; Alcohol (70 p. c.), 200.

All are by weight.

ALOIN.

ALOIN.

$C_{16}H_{18}O_7$.

A yellow, inodorous crystalline substance extracted from Aloes by solvents and recrystallization. As obtained from the different varieties of Aloes the products differ slightly, but their medicinal properties are similar.—*Brit. Pharm.*

B. P. Dose.—½ to 2 grains.

"Aloin has very properly been passed without recognition by the U.S.P.;" "the different kinds of Aloin vary as much from each other as do the alkaloids of Cinchona Barks."—Squibb's *Ephemeris*, '84, 669.

Barbaloin, Zanaloin, and Nataloin, in doses of 2 grains, are each of them more or less aperient. They are each of them decidedly uncertain and variable in their action. 2 grains of Barbaloin cause a decided effect. 4 grains of Socaloin and Nataloin have been frequently given without producing more than a slight effect.—*P.J.* vii. 155, 264.

Solubility.—1 in 400 of Water; 1 in 70 of Rectified Spirit; freely soluble in hot fluids; nearly insoluble in Ether.

Not Official.

PILULA ALOINÆ COMPOSITA.—Aloinæ, Extracti Nucis Vomicæ, Ferri Sulphatis, Pulv. Myrrhæ, Saponis, ana ½ gr.—*L.* '87, i. 2.

Not Official.

ALTHÆÆ RADIX.

MARSHMALLOW.

The root of *Althæa officinalis*, which is very mucilaginous. When decorticated and dried it is much used as a powder in the preparation of lozenges and pill masses.

(Austr., Belg., Dan., Dutch, Fr. (Guimauve), Ger., Hung., Norw., Port., Russ., Span. (Altea), Swed., Swiss and U.S.)

Medicinal Properties.—It is much employed on the Continent as a demulcent in irritation and inflammation of the mucous membranes.

Preparations.

SYRUPUS ALTHÆÆ.—Macerate 3 of Althea Root in 40 of Water for twelve hours: strain, press, and filter until 32 have passed through; to this add 64 of Sugar, dissolve warm, and heat tho Syrup to boiling; when cold, skim and strain through flannel.

A syrup made in this way kept good for two years.

(In all the Foreign Pharmacopœias; but they differ somewhat in the proportion of Root employed and in manipulation.)

TROCHISCI ALTHÆÆ (*T.H.*).—About 1 grain in each lozenge. Emollient. Valuable after excision of tonsils or uvula.

(Lozenges are official in Austr. and Fr.; not in the other Pharmacopœias.)

Not Official.

ALUMINIUM.

ALUMINIUM.

Al, eq. 27.

A silver-white metal, sonorous, and lighter than glass, having sp. g. 2·560.

Indicated by Sir Humphrey Davy in 1808; made by Wöhler by decomposing its chloride with Sodium in 1828, and first produced in ingots by M. Deville in 1854. It resists the action of cold concentrated Nitric and Sulphuric Acids, but is readily attacked by Hydrochloric Acid. Its oxide, being identical with Sapphire, forms an impermeable crust on the surface of the metal, and protects it from further action of the air. Its use is limited at present to jewellery, but, from its extreme lightness and tenacity, it promises to be much more extensively employed if some means of soldering it together could be discovered.

Neither Aluminium nor Alumina is in the British Pharmacopœia. Alumina, however, is much used to fine turbid medicinal waters and other solutions, and is easily obtained by adding in excess a solution of Carbonate of Potassium or Sodium to a solution of Alum, and well washing the precipitate.

Not Official.

CIMOLITE is composed of Alumina, 23; Silica, 63; Oxide of Iron, 1·25; Water, 12.

FULLER'S EARTH, is composed of Alumina, 10; Silica, 53; Lime, 0·5; Magnesia, 1·25; Oxide of Iron, 9·5; Water, 24.

KAOLIN is a Silicate of Aluminium. See p. 254.

SOAPSTONE, CRETA GALLICA, is a Silicate of Aluminium and Magnesium. Is used in prurigo and as a dusting powder for infants, alone or mixed with equal parts of Oxide of Zinc or Calamine.

ACETATE OF ALUMINIUM SOLUTION (Ph. Ger.)—A clear colourless liquid, with an acid reaction and a faint odour of Acetic Acid. Sp. g. 1·044—1·046.

A good antiseptic, preferred by some to Carbolic Acid for dressing lacerated wounds. —*T.G.* '85, 727; also '86, 573.

ACETO-TARTRATE OF ALUMINIUM.—Crystals soluble in their own weight of water.

A powerful, non-poisonous antiseptic; also an astringent caustic.

30 to 60 grs. in a pint of water makes a useful **gargle** or **douche.**—*L.M.R.* '86 433; *L.* '88, i. 339.

CHLORIDE OF ALUMINIUM SOLUTION (*T.H.*).—Obtained by dissolving Alumina or Aluminium Hydrate in Hydrochloric Acid. A pale yellow liquid. Sp. g. 1·250. **Gargle,** 12 mins. to 1 oz. of water; **Spray,** 3 mins. to 1 oz.; **Paint,** 15 mins. to 1 oz. Astringent and antiseptic.

A solution has been used largely as a disinfectant under the name Chloralum.

NITRATE OF ALUMINIUM.—A **solution** (4 or 6 grains in 1 oz. of Water) has been used with success in pruritus vulva.

OLEATE OF ALUMINIUM.—A powder. Mixed with equal parts of Lard, is used as a styptic and antiseptic, in checking the muco-purulent discharges in eczema.—*L.* '84, ii. 123.

ALUMEN.

ALUM.

Sulphate of Aluminium and Potassium, $Al_2 3SO_4$, K_2SO_4, $24H_2O$, eq. 948.

Sulphate of Aluminium and Ammonium, $Al_2 3SO_4$, $(NH_4)_2SO_4$, $24H_2O$, eq. 906.

Sulphate of Aluminium forms double salts, called Alums, with the Sulphates of Potassium, Sodium, or Ammonium. Commercial Alum is made with salts of Potassium or Ammonium, according to their respective value at the time.

Both Potassium and Ammonium Alums are now included in B.P.

Potash Alum or Ammonia Alum crystallized from solution in Water.

In colourless transparent crystalline masses, exhibiting the faces of the regular octahedron.

Alum when heated melts in its own water of crystallization.

Solubility.—1 in 11 of Water; 3 in 1 of boiling Water; Potash Alum, 1 in 3 of Glycerine; Ammonia Alum, 1 in 1¼ of Glycerine. Insoluble in Rectified and Proof Spirit.

Tests.—Its aqueous solution gives a white precipitate (Hydrate of Aluminium) with solution of Potash or Soda, soluble in excess; gives a white precipitate with Chloride of Barium (Sulphate of Barium); affords little or no colour with Ferrocyanide or Ferricyanide of Potassium—indicating absence, or only a trace of Iron.

Potash Alum is distinguished from Ammonia Alum by the latter giving off Ammonia when its aqueous solution is heated with Potash or Soda.

(Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Norw., Port., Russ., Span. (Alumbre), Swed., Swiss, and U.S. use Potash Alum only.)

Medicinal Properties.—Astringent, used as a **gargle** for relaxed throat, 10 grs. in 1 oz. of Water; as an **injection** in leucorrhœa, 60 grs. in a pint of Water; as a **nasal douche**, 4 grs. in 1 oz. of Water; as a **snuff** in epistaxis, 3 grs. mixed with ½ gr. of Starch; as a **collyrium** to the eyes in children and adults when there is mucus or purulent matter, 2 to 6 grs. in 1 oz. of Water; 10 to 15 grs. three times a day has been given for internal hæmorrhages, for menorrhagia, and in cases of lead poisoning. A saturated **solution** in Water forms an excellent styptic for hæmorrhage, leech bites, &c. Given in the later stages of whooping cough. It has also been recommended as an emetic in croup.

Dose.—10 to 20 grs.; for children 2 to 5 grs. A teaspoonful in Honey or Treacle acts as an emetic.

Incompatibles.—Alkalies and their Carbonates, Tannic Acid, and astringent decoctions and infusions.

Preparations.

GLYCERINUM ALUMINIS.

Alum, in powder, 1; Glycerine, 5. Stir together in a porcelain dish, gently applying heat until solution is effected; set aside, and pour off the clear fluid from any deposited matter.

(By weight 1 in 7¼, by measure 1 in 5½.)

But Alum should dissolve clear in Glycerine.

Sp. g. about 1·3.

A powerful local astringent. When diluted with Water it forms a useful gargle.

ALUMEN EXSICCATUM. *Syn.* ALUMEN USTUM. Dried Alum.

Heat Potassium Alum in a porcelain capsule till it liquefies; raise and continue the heat, not allowing it to exceed 400° F. (204·4° C.), till aqueous vapour ceases to be disengaged, and then reduce the residue to powder.

Should be slowly but completely soluble in Water; as a rule commercial samples are not: four samples gave 2 to 8 p. c. insoluble in Water.

Ph. Ger. limits the temperature to 160° C. (320° F.).

100 parts of Alum yield about 54 parts of dried Alum.

As it readily absorbs Water from the atmosphere, it should be kept in a well-stoppered bottle.

For external use only. Escharotic, used as a stimulant to indolent ulcers, also in ulcerative stomatitis.

(Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Norw., Port., Russ., Span., Swed., Swiss, and U.S.)

Not Official.

ALUM CATAPLASM, or **POULTICE.**—Alum, 60 grs.; the whites of two eggs. For chilblains; also a good application to black bruises.

ALUM GARGLE.—Broken rose petals, 3 drms.; Diluted Sulphuric Acid, 3 drms.: cold Distilled Water, 10 oz.; digest for two hours, and strain 8 oz.; then add Alum, 2 drms.; Sugar, 4 drms.; Rectified Spirit, 4 drms.; dissolve. This kept well 7 years. When used, to be mixed with an equal bulk of Water.

Several formulæ for Alum gargle will be found in Squire's Pharmacopœias of the London Hospitals.

GOSSYPIUM ALUMINIS (*T. H.*).—Contains about 30 per cent. of Alum.

ALUM WHEY.—Alum, 120 grs. boiled in a pint of Milk. **Dose.**—A wineglassful.

FERRI ET AMMONII SULPHAS.—Ammonio-Ferric Alum, U.S.P.

Iron Alum is an Alum in which Iron takes the place of Aluminium. It is especially useful in bleeding from the kidneys; it arrests the hæmorrhage and the anæmia that accompanies it; it is considered more astringent than Alum.

The aqueous solution will, even after filtration, let fall Peroxide of Iron.

Dose.—5 to 10 grs.

AMMONIACUM.

AMMONIACUM.

A gum-resinous exudation from the stem (after being punctured by beetles) of *Dorema ammoniacum*, in tears or masses, of a pale yellow colour changing to a cinnamon brown on long exposure to the air, brittle when cold, but readily softens with heat, and when broken has an opaque white and shining surface. Collected in Persia.

Solubility.—Sparingly in Water, but forms with it a nearly white emulsion; when 50 grs. are digested in 2 oz. of Rectified Spirit, 40 grs. are dissolved, but with Proof Spirit 30 grs. are dissolved.

(Austr., Belg., Dan., Dutch, Ger., Hung., Norw., Port., Russ., Span., Swed. Swiss, and U.S.; Fr., purified by Alcohol (60 p. c.).)

Medicinal Properties.—Antispasmodic, stimulant, expectorant; useful in chronic catarrh, bronchitic affections, and asthma, either in mixture or in pill.

Dose.—10 to 20 grs.

Contained in Emplastrum Galbani, in Pilula Scillæ Composita, and Pil. Ipecacuanhæ cum Scilla.

Preparations.

EMPLASTRUM AMMONIACI CUM HYDRARGYRO. *See* HYDRARGYRUM.

As the value of this preparation depends chiefly upon the Mercury it contains, the formula is given under Hydrargyrum.

MISTURA AMMONIACI.

Ammoniacum, ¼ oz., rubbed down with Water 8 oz., gradually added; strain through muslin. = (1 in 32).

Dose.—½ to 1 oz. as an expectorant; may be combined with 15 minims of Tincture of Squill, or 15 minims of Fœtid Spirit of Ammonia.

(Span. (Emulsion), 1 in 36 with White Wine; U.S. about 1 in 25; not in the others.)

Not Official.

MISTURA AMMONIACI COMP.—Comp. Tinct. Camphor, 30 mins.; Oxymel of Squill, 30 mins.; Ammoniacum Mixture, to 1 oz.—*Consumption Hospital.*

Not Official.

AMMONIUM.

AMMONIUM.

NH_4, eq. 18.

According to Roscoe, Ammonium has been isolated, but it does not seem to be able to exist in an uncombined state, unless under high pressure and at a low temperature; it is a dark blue liquid possessing a metallic lustre, and very readily decomposes into Ammonia and Hydrogen.

AMMONIA.

AMMONIA.

This important compound is chiefly produced artificially, but it exists in some volcanic products, and is discoverable in sea-water. It is found also in putrid urine and in the salts produced by the decomposition of animal matter.

Its history in the form of Sal Ammoniac is very ancient. This salt was manufactured in very early times from soot afforded by the combustion of camels' dung, from which it was obtained by sublimation. The process was chiefly conducted in the neighbourhood of the temple of Jupiter Ammon in Egypt, and to this circumstance it owes its name; it was afterwards obtained either from putrid urine or by the destructive distillation of animal substances.

The chief source at present is the liquor from the gas-works and from Paraffin Shale, but the Ammonia produced in this way is apt to contain impurities, particularly the organic bases known as "the compound Ammonias."

The purest form of Ammonia is that obtained as a by-product in the manufacture of Borax. The Boracic Acid of Tuscany, when saturated with Soda, evolves very considerable quantities of pure Ammonia, and the Liquor Ammoniæ and Carbonate of Ammonium, produced in this way, are sold under the name of Volcanic Ammonia, but they are scarce at the present time. This has led to the better purification of the Ammonias from Coal, which can now be obtained sufficiently pure for all pharmaceutical purposes.

The whole of the Preparations of Ammonia are here grouped.

AMMONIÆ LIQUOR FORTIOR.

STRONG SOLUTION OF AMMONIA.

Contains 32·5 per cent. of Ammoniacal Gas, NH_3, eq. 17, dissolved in Water.

A colourless liquid, with a characteristic and very pungent odour, and a strong alkaline reaction.

Tests.—Sp. g. ·891. 52·3 grains by weight requires for neutralization 1000 grain-measures of the volumetric solution of Oxalic Acid. When diluted with four times its volume of Distilled Water, it does not give precipitates with solution of Lime, Oxalate or Sulphide of Ammonium, or Ammonio-Sulphate of Copper, and when treated with an excess of

Nitric Acid is not rendered turbid by Nitrate of Silver or by Chloride of Barium—indicating freedom from carbonates, lime, metals, sulphides, chlorides, and sulphates.

1 fluid drachm contains 15·83 grains of Ammonia NH_3.

Best given in the more diluted state, as in Liq. Ammoniæ.

(Belg., Ammonia Liquida, sp. g. ·935, 17 per cent.; Fr., Ammoniaque Liquide, sp. g. ·925; Port., Ammonia Liquida, sp. g. ·916; Span., Amoniaco Liquido, sp. g. ·923; U.S., sp. g. ·900, 28 per cent.; *see* also Liquor Ammoniæ.)

Used in the preparation of Ammonii Phosphas, Linimentum Camphoræ Compositum, Liquor Ammonii Citratis Fortior, Spiritus Ammoniæ Aromaticus, Spiritus Ammoniæ Fœtidus, Tinctura Opii Ammoniata.

Antidotes.—Acetic Acid or Vinegar well diluted with Water; demulcent drinks.

Preparations.

LIQUOR AMMONIÆ. SOLUTION OF AMMONIA.

Strong Solution of Ammonia, 1; Distilled Water, 2; mix. Colourless. Contains 10 per cent. by weight of Ammonia, NH_3.

1 fluid drachm contains 5·2 grains of Ammonia NH_3.

Tests.—Sp. g. ·959. 85 grains by weight requires for neutralization 500 grain-measures of the volumetric solution of Oxalic Acid.

(Austr., Dan., Ger., Hung., Norw., Russ., Swed. and Swiss (10 per cent.) sp. g. ·960; Dutch, sp. g. ·958—·960; U.S., sp. g. ·959; Belg., Fr., Port., Span. and U.S., *see* Ammon. Liq. Fort.)

Medicinal Properties.—Stimulant, antacid, and antispasmodic; relieves nervous headache, and is useful in pneumonia, bronchitis, and dyspepsia. Counteracts the after-effects of alcohol, and delirium tremens. Stimulant in low states of the system, as typhoid forms of fever. Externally (applied to the nostrils) in syncope; an excellent application to the sting of a wasp or the bite of an adder. On the skin it is a powerful rubefacient, and in embrocations, it is used as a counter-irritant for pains and stiffness of joints, &c.

Dose.—10 to 20 minims in some bland fluid.

Used in the preparation of Ammonii Benzoas, Ferri et Ammonii Citras, Ferri et Quininæ Citras, Ferrum Tartaratum, Injectio Morphinæ Hypodermica, Linimentum Ammoniæ, Linimentum Hydrargyri, Liquor Bismuthi et Ammonii Citratis, Tinctura Quininæ Ammoniata.

LINIMENTUM AMMONIÆ.

Solution of Ammonia, 1; Olive Oil, 3; mix. = (1 in 4).

A counter-irritant.

(Dan., Russ. and Swed., 1 and 3 Olive Oil; Austr. and Dutch, 1 and 4 Olive Oil; Belg. and Fr., 1 and 9 Almond Oil; Ger., Liq. Am. 1, Olive Oil 3, Poppy Oil 1; Hung., 1 and 4 Sesami Oil; Port., 1 and 4 Almond Oil; Span., 1 and 7½ Olive Oil; Swiss, 1 and 3 Poppy or Sesami Oil; U.S., 3 and 7 Cotton Seed Oil; not in Norw. All are by weight.)

SPIRTIUS AMMONIÆ FŒTIDUS. FŒTID SPIRIT OF AMMONIA.

Strong Solution of Ammonia, 2; Asafœtida in small pieces, 1½; Rectified Spirit, a sufficiency; macerate the Asafœtida in 15 of the Spirit twenty-four hours, distil, add the Ammonia to the distillate, and make up with Rectified Spirit to 20.

Test.—Sp. g. ·847.

Stimulant, antispasmodic, combined with Ammoniacum Mixture excellent for catarrh and asthma of old people.

Dose.—½ to 1 drachm.

(Not in the other Pharmacopœias.)

Not Official.

LOTIO CRINALIS—Ol. Amygdal. 1 oz.; Liq. Ammon. Fort. 1 oz.; Sp. Rosmar. 4 oz.; Aq. Mellis, 2 oz.; mix.

TINCT. AMMON. COMP.—EAU DE LUCE.—Mastic, 2 drs.; Rectified Spirit, 9 drs.; Ol. Lavand. 14 min.; Strong Liquor Ammoniæ, 20 oz.: dissolve. Stimulant, antispasmodic.

Dose.—5 to 10 minims in Water.

AMMONII ACETATIS LIQUOR FORTIOR.

STRONG SOLUTION OF ACETATE OF AMMONIUM.

$NH_4.C_2H_3O_2$, eq. 77, dissolved in Water.

Carbonate of Ammonium, 15½, or a sufficiency; Acetic Acid, 50; Distilled Water, a sufficiency.

Reduce the Carbonate to powder and add it gradually to the Acid to form a neutral solution, then add sufficient Distilled Water to yield 60.

Tests.—Sp. g. 1·073. A little of the solution heated in a test tube to expel Carbonic Acid should be neutral to test papers.

When no allowance is made for the low strength in Ammonia of the commercial Carbonate, the sp. g. of this Liquor may be expected to be low.

Dose.—20 to 60 minims diluted with water.

Preparation.

AMMONII ACETATIS LIQUOR. Solution of Acetate of Ammonium. Mindererus Spirit.

Strong solution of Acetate of Ammonium, 1; Distilled Water sufficient to produce 5: mix.

As the only reason for using Carbonate of Ammonia in preference to the Liquor Ammoniæ is assumed to be that the Carbonic Acid improves the flavour, the dilute Solution should either be made directly from the Carbonate, or the Liquor Ammonii Acetatis Fortior should be diluted with Carbonic Acid Water. The amount of Gas contained in the Official Liquor is practically nil, except when freshly prepared.

The solution should be stored in bottles free from Lead.

Test.—Sp. g. 1·022.

(Austr., sp. g. 1·030; Belg. and Port., sp. g. 1·029: Fr. and Span., sp. g. 1·036; U.S., 1·022; all made with Carbonate. Dan., Norw., and Swed. (20 p.c.), sp. g. 1·038 to 1·042; Dutch, sp. g. 1·032 to 1·034 (15 p.c.); Ger. and Hung., sp. g. 1·032 to 1·034; Russ., sp. g. 1·030 to 1·032; all made with Caustic Ammonia. Swiss, sp. g. 1·030, no formula given.)

Medicinal Properties.—Diaphoretic and refrigerant. Internally, it increases the secretion by the skin and kidneys, therefore useful in febrile and inflammatory diseases, and in dysmenorrhœa. Given in full doses for alcoholism. Externally, in the proportion of 1 to 10 of Water, as a **collyrium** in chronic ophthalmia, or mixed with weak spirit for a cooling **lotion.**

Dose.—2 to 6 drms.; for children, ½ to 1 drm.

A nice fever mixture is made with Liq. Ammon. Acet. ʒij, Ammon. Carbon. gr. viij, Succ. Limon. ʒij, Syrup. ʒj, Aquæ Camphor. ℥ss, Aquæ ad ℥iv: mix; a fourth part every six hours.

Incompatibles.—Acids, Potash, Soda, and their Carbonates, Lime Water, Salts of Lead and Silver.

AMMONII BENZOAS.

BENZOATE OF AMMONIUM.

$NH_4C_7H_5O_2$, eq. 139.

Colourless laminar crystals.

Solution of Ammonia, 3, or a sufficiency; Benzoic Acid, 2; Distilled Water, 4; dissolve and evaporate, keeping the Ammonia in slight excess, and set aside to crystallize; when 3½ of Ammonia are used, it makes a neutral salt.

Solubility.—Of the neutral Salt, 1 in 5 of Water; 1 in 22 of Rectified Spirit; 1 in 8 of Glycerine.

Tests.—When heated, it sublimes without residue. Its aqueous solution, if not too dilute, deposits Benzoic Acid when it is acidulated with Hydrochloric Acid; when heated with solution of Potash it evolves Ammonia; with persalts of Iron it gives a bulky reddish-yellow precipitate.

(Fr., Port., and U.S.; Russ., solution 12·5 per cent.; not in the others.)

Medicinal Properties.—Diuretic, employed in dropsy, and in gout when chalk-stones are deposited near the joints. It is more soluble than Benzoic Acid, and therefore acts more quickly. Is valuable in catarrhus vesicæ with alkaline urine, also in cases of phosphatic deposit. Benzoic Acid, when taken into the body, appears to take up Glycocol and forms Hippuric Acid. The Ammonia does not, like Potash and Soda, pass through the kidneys. Has been recommended in 15 grain doses, for scarlet fever.

Stimulates the liver, but not quite so powerfully as the Benzoate of Soda; neither of them stimulates the intestinal glands.—Dr. Rutherford.

Dose.—10 to 20 grains in Water.

Incompatibles.—Persalts of Iron, Liquor Potassæ, and Acids.

Not Official.

AMMONII BORAS.

A crystalline salt, with an alkaline reaction.

Solubility.—1 in 15 of Water.

Medicinal Properties.—Has been used with success in renal and vesical calculi.

For colic, 20 grains every two hours until free passage of urine takes place, then 15 grains three times a day.—*T G.* '87, 623.

5 grains three times a day have been given in phthisis.—*L.* '87, ii. 277.

AMMONII BROMIDUM.

BROMIDE OF AMMONIUM.

Syn. Ammonium Bromatum.

NH_4Br, eq. 98.

In small colourless crystals, which may be sublimed unchanged.

Solubility.—1 in 1½ of Water; 1 in 15 of Rectified Spirit.

Tests.—Its aqueous solution, when heated with solution of Potash, should evolve Ammonia; when mixed with a little Chlorine and agitated with Chloroform, colours the latter red (Bromine); gives only a faint cloudiness with Chloride of Barium (Sulphate). It does not give an immediate yellow colour on being moistened with diluted

Sulphuric Acid (Bromate). Five grains dissolved in an ounce of Distilled Water, to which two drops of solution of yellow Chromate of Potassium have been added, require not more than 514·5 and not less than 508·5 grain-measures of the volumetric Solution of Nitrate of Silver to produce a permanent red precipitate.

Its aqueous solution does not exhibit a blue colour with Mucilage of Starch and a drop of Chlorine Water—showing absence of Iodine.

If too much Chlorine water be added, the presence of Iodine may be overlooked owing to the formation of colourless Chloride of Iodine.

(Austr., Dutch, Fr., Ger., Russ., Swiss, and U.S.; not in the others.)

Medicinal Properties.—An excellent nervine, good in hysterics; especially useful for sleeplessness of nervous persons where there is no organic disease; relieves headache and neuralgic pain, also the intolerable itching in prurigo. Sedative in pharyngeal and laryngeal irritation, especially in whooping cough; dose for children, 1 to 5 grs. three times a day in Water.

Dose—5 to 20 grains.

Incompatibles.—Acids and Acidulous Salts, and Sp. of Nitrous Æther.

Not Official.

LOZENGES, containing 2 grains of Bromide of Ammonium in each. Dose, 1 to 3 lozenges. Useful in whooping cough.

AMMONII CARBONAS.

CARBONATE OF AMMONIUM.

Syn.—Ammoniæ Sesquicarbonas.

$N_3H_{11}C_2O_5$, eq. 157.

It is considered to be a compound of Acid Carbonate of Ammonium, NH_4HCO_3, with Carbamate of Ammonium, $NH_4NH_2CO_2$, and the compound molecule is usually regarded as containing one molecule of each of these salts.

Sublimed from a mixture of Carbonate of Calcium and Sulphate or Chloride of Ammonium, and then resublimed.

Translucent crystalline masses, which have a strong Ammoniacal odour and an alkaline reaction.

Solubility.—1 in 4 of Water; 1 in 200 of Spirit; 1 in 5 of Glycerine.

Tests.—52·3 grains dissolved in an ounce of Distilled Water are neutralized by 1000 grain-measures of the volumetric solution of Oxalic Acid. Volatilizes entirely when heated. If diluted Nitric Acid be added to it in slight excess it will give no precipitate with Nitrate of Silver or Chloride of Barium (absence of Chlorides and Sulphates).

We have not found a sample (even Volcanic) which gives the full amount of Ammonia required by the volumetric test; different samples gave 91—96 p. c. of the prescribed amount.

Used in the preparation of Bismuthi Carbonas, Ferri Carbonas Saccharata, Liquor Ammonii Acetatis Fortior.

(Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Norw., Port., Russ., Span., Swed., Swiss, and U.S.)

Medicinal Properties.—Antacid, antiseptic, stimulant, sudorific, and expectorant. Frequently combined with Ipecacuanha in bronchitis. 3 to 5 grain doses have been given with good effect in scarlet fever.

Rarely as an emetic in ½ drm. doses. 60 grs. of this, or two tablespoonfuls of Sal Volatile to 20 oz. of warm water, sponged on the body, is refreshing.

Has been recommended in full and continuous doses in cholera, in the place of alcoholic stimulants.—*B.M.J.* '85, ii. 380.

Dose.—3 to 10 grains in Camphor Water ½ oz., and Water 1 oz., mixed.

15 grains dissolved in water are taken with 17 grains of Citric Acid to form a saline draught.

Incompatibles.—Acids, Acidulous Salts, Earthy Salts, and Lime Water.

Preparations.

SPIRITUS AMMONIÆ AROMATICUS. *Syn.* SP. SAL VOLATILE.

Carbonate of Ammonium, 4 oz.; Strong Solution of Ammonia, 8 oz.; Volatile Oil of Nutmeg, 4½ drms.; Oil of Lemon, 6½ drms.; Rectified Spirit, 6 pints (= 120 oz.); Water, 3 pints (= 60 oz.).

Place the Oils of Lemon and Nutmeg and Rectified Spirit with the Water in a retort; distil 7 pints (140 oz.), and then distil and separately collect an additional 9 oz. Place the 9 oz. of distillate, together with the Carbonate of Ammonium and the Strong Solution of Ammonia, in a bottle holding rather more than a pint (20 oz.); securely cork the bottle, and gently warm it in a water-bath to 140° F. (60° C.), shaking from time to time, until all the salt has dissolved. Filter if necessary, when cold, through a little cotton wool, and gradually mix it with the 7 pints of distilled Spirit. The product should measure one gallon (160 oz.).

Tests.—Sp. g. ·896—·900. One fluid ounce requires for neutralization 558 grain-measures of the volumetric solution of Oxalic Acid. One fluid ounce, after the addition of 330 grain-measures of the test solution of Chloride of Barium, should yield, after filtration, a further precipitate when more of the reagent is added.

A domestic remedy for nervous headache, more useful when combined with Bromide of Ammonium.

Dose.—20 to 60 minims in Camphor Water; for children, 3 mins.

(U.S., a *mixture*, Fr. (Alcoolat Aromatique Ammoniacal), Dutch, Port. and Swiss, *distilled;* all contain Carbonate, but differ considerably from Brit. Pharm. Austr., Belg., Dan., Dutch, Ger., Hung., Norw., Russ., Span., and Swed. have Liquor or Spiritus Ammonii Anisatus, a mixture of Oil of Anise, Spirit, and Liq. Ammon., but in slightly different proportions.)

Used in the preparation of Tinctura Guaiaci Ammoniata, and Tinctura Valerianæ Ammoniata.

Not Official.

SPIRITUS or LIQUOR AMMONII ANISATUS.

Austr., Ger. and Span.—Oil of Anise, 1; Alcohol, 24; Solution of Ammonia, 5.
Belg. and Hung.—Oil of Anise, 1; Alcohol, 24; Solution of Ammonia, 6.
Dan., Norw. and Swed.—Oil of Anise, 1; Alcohol, 32; Solution of Ammonia, 7.
Dutch.—Oil of Anise, 1; Alcohol, 19; Solution of Ammonia, 5.
Russ.—Oil of Anise, 1; Alcohol, 32; Solution of Ammonia, 8.

LIQUOR VOLATILIS CORNU CERVI, or SPIRIT OF HARTSHORN.—Saturated Solution of Carbonate of Ammonia of the old Pharmacopœias, distilled from Hartshorn.

HARTSHORN AND OIL.—1 of Sp. Hartshorn and 3 of Oil of Almonds: mix.

AMMONII CHLORIDUM.

CHLORIDE OF AMMONIUM.

Syn.—AMMONIÆ HYDROCHLORAS; AMMONIUM CHLORATUM; SAL AMMONIAC.

NH_4Cl, eq. 53·5.

Usually prepared by sublimation; colourless, inodorous, translucent, fibrous masses, tough and difficult to powder.

It should be recrystallized for medicinal use.

Solubility.— 1 in 3 of Water; 1 in 55 of Rectified Spirit.

Tests.—When heated, it volatilizes without decomposition, and leaves no residue. Its aqueous solution evolves Ammonia when heated with Solution of Potash, and gives a white precipitate with Nitrate of Silver soluble in Ammonia.

(Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Norw., Port., Russ., Span., Swed., Swiss and U.S.)

Medicinal Properties.—Expectorant in chronic bronchitis, internally or by inhalation; is a cholagogue and emmenagogue; diaphoretic, diuretic, and alterative in rheumatism; useful in portal dropsy, given in doses of 20 or 30 grs. in half a tumbler of cold water every 4 or 6 hours, in scrofulous and syphilitic enlargement of the glands; useful in hepatitis; said to counteract the tendency to albumenoid degeneration. In facial neuralgia, in doses of 30 grains three times a day, relieves after 4 or 5 doses, otherwise it is of no use to continue it. As a stimulant and resolvent in bursæ and indolent tumours, also in acne simplex.

Stimulates the intestinal glands, but not the liver.—Dr. Rutherford.

B. P. Dose, 5 to 20 grains.

Dose.—10 grains in a claret-glassful (3 oz.) of cold Water, frequently sipped, allays distressing fits of coughing in bronchitis. 10 mins. Sp. Chloroform and 30 of Syrup render it palatable.

Used in the preparation of Liquor Ammoniæ Fortior and Liquor Hydrargyri Perchloridi.

Incompatibles.—Alkalies, Alkaline Earths, and their Carbonates; Lead and Silver Salts.

Not Official.

DRAUGHT.—Ammonii Chloridi, gr. xv; Tinct. Limon., ♏xlv; Sp. Chloroformi, ♏x; Aquæ, ad ℥iss.

LOTION.—1 oz. with 1 oz. Rectified Spirit and 10 oz. Water; Vinegar is sometimes added, to be applied as a dressing for bruises.

LOZENGES.—2 or 3 grains each, are much resorted to for bronchitis.

Dose.—2 to 4 lozenges.

AMMONII CITRATIS LIQUOR FORTIOR.

STRONG SOLUTION OF CITRATE OF AMMONIUM.

Citrate of Ammonium, $(NH_4)_3C_6H_5O_7$, eq. 243, dissolved in Water.

Strong Solution of Ammonia, 11, or a sufficiency; Citric Acid, 12; Distilled Water, a sufficiency. Neutralize the Acid with the Ammonia, adding sufficient Distilled Water to yield 24 of product.

The solution should be stored in bottles free from Lead.

Tests.—Sp. g. 1·209. Colourless. Neutral to test-papers.

Dose.—30 to 90 minims.

(Not in the Foreign Pharmacopœias.)

Preparation.

LIQUOR AMMONII CITRATIS.

Strong Solution of Citrate of Ammonium, 1; Distilled Water, sufficient to produce 4: mix.

The solution should be stored in bottles free from Lead.

Test.—Sp. g. 1·062.

Medicinal Properties.—Similar to Liquor Ammonii Acetatis.

Dose.—2 to 6 fluid drms.; for children ½ to 1 drm.

(Not in the Foreign Pharmacopœias.)

Not Official.

AMMONII IODIDUM.

IODIDE OF AMMONIUM.

A whitish deliquescent salt, granular or in crystals, which readily becomes yellow on exposure to air; when deeply coloured it should not be used in dispensing, till the colour has been removed by shaking it in a bottle with a lump of Carbonate of Ammonium.

Solubility.—4 in 3 of Water; 1 in 3 of Rectified Spirit; 3 in 4 of Glycerine.

(Fr., Port., Russ., Span., Swiss, and U.S.; not in the others.)

Medicinal Properties.—Similar to the Iodide of Potassium, but more active.

Dose.—2 to 5 grains three times a day; but much larger doses can be given.

UNGUENTUM AMMONII IODIDI.—Iodide of Ammonium, 120 grains; Lard, 1 oz. Used night and morning.

AMMONII NITRAS.

NITRATE OF AMMONIUM.

NH_4NO_3, eq. 80.

A white deliquescent salt, in confused crystalline masses, having a bitter acrid taste.

It fuses at a temperature of 320° F. (160° C.), and at 350° F. (176·7° C.) to 450° F. (232·2° C.) it is entirely resolved into Nitrous Oxide Gas, N_2O, and the vapour of water.

Solubility.—4 in 3 of Water; 1 in 14 of Rectified Spirit.

Tests.—A solution of one part in eight parts of Distilled Water gives no precipitate with solution of Nitrate of Silver or of Chloride of Barium—indicating absence of Chlorides and Sulphates.

(Port., Russ. and U.S.; not in the others.)

Medicinal Properties.—Chiefly used for preparing Nitrous Oxide Gas (Laughing Gas). This gas is a rapid and safe anæsthetic, extensively used by dentists.

Recommended to be used with 12½ per cent. of oxygen.—*L.* '89, i. 835.

AMMONII PHOSPHAS.

PHOSPHATE OF AMMONIUM.

$(NH_4)_2HPO_4$, eq. 132.

In colourless transparent prisms, which, upon exposure to air, lose Water and Ammonia, and become opaque.

Obtained by adding strong Solution of Ammonia to Diluted Phosphoric Acid, until the solution is slightly alkaline; during the evaporation of this liquid, more Ammonia should be added from time to time to keep it in slight excess, and when crystals are formed on the cooling of the solution, dry them quickly on filtering paper placed on a porous tile, and preserve them in a stoppered bottle.

Solubility.—1 in 2 of Water ; insoluble in Rectified Spirit.

Test.—If 20 grains be dissolved in Water, and Solution of Ammonio-sulphate of Magnesium be added, a crystalline precipitate falls, which, when well washed upon a filter with Solution of Ammonia diluted with an equal volume of Water, dried, and heated to redness, leaves 16·8 grains. The crystalline precipitate is the Ammonio-phosphate of Magnesium, and when this is heated to redness the Ammonia is driven off, and the Pyro-phosphate of Magnesium is left.

(Port., Russ. and U.S. ; not in the others.

Medicinal Properties.—Diaphoretic and discutient. Given in gout and rheumatism to render the Urates of Sodium and Calcium in the urine soluble. Of great value in cases of Uric Acid calculus.

Is a powerful stimulant of the liver. It does not stimulate the intestinal glands.—Dr. Rutherford.

Dose.—5 to 20 grains 3 or 4 times a day in Water.

Should not be prescribed in too condensed a form when tinctures form part of the mixture, on account of its sparing solubility in spirituous menstrua.

Not Official.

AMMONII PICRAS.

Has been strongly recommended in the treatment of malarial fevers in India.—*L.* '87, i. 366.

Dose.—$\frac{1}{8}$ to $1\frac{1}{2}$ grains. Average dose, $\frac{1}{2}$ grain four or five times a day in a pill.

AMYGDALA AMARA.

BITTER ALMOND.

The ripe seed of the bitter almond tree, *Prunus amygdalus, var. amara,* brought chiefly from Mogadore.

Introduced only for expressing the oil from it. Yields from 42 to 44 per cent.

(In all the foreign Pharmacopœias except Dutch ; Fr., Amandes Amères ; Port., Amendoas Amargas ; Span., Almendro Amargo.)

Not Official.

AQUA AMYGDALÆ AMARÆ.—Prepared by crushing the bitter almonds and expressing the fixed oil, and then distilling the residual cake with water so that it shall contain the proper quantity of Hydrocyanic Acid ordered in the particular Pharmacopœia.

The following gives the percentage of Hydrocyanic Acid :—

(Austr. (Conc.) ·1 per cent., (Dil.) ·005 p. c. ; Dan. (Conc.) ·14 p. c., (Dil.) ·007 p. c. ; Ger., Hung., and Swiss, ·1 p. c. ; Norw., ·139 p. c. ; Port., not standardised ; Russ., ·1 p. c., (Dil.) ·002 p. c. ; Span., ·083 p. c. ; Swed. (Conc.) ·13—·14 p. c., (Dil.) ·007 p. c. ; U. S., not standardised, 1 Volatile Oil in 1000 ; not in the others.)

MISTURA AMYGDALÆ AMARÆ.—Made in the same proportions as Mistura Amygdalæ.

Useful in cough, and as a lotion to allay itching of the skin. It was a favourite vehicle for giving Tartarated Antimony, in doses of $\frac{1}{8}$ grain, to subdue inflammatory action of the lungs and relieve cough. The mixture contains a variable amount of Prussic Acid.

Dose.—$\frac{1}{2}$ to $1\frac{1}{2}$ oz.

Not Official.

OLEUM AMYGDALÆ AMARÆ.

A volatile oil obtained from Bitter Almonds by maceration with water and subsequent distillation.

A pale yellowish thin liquid, with a characteristic odour.

Sp. g. 1·060—1·070 (after removal of Hydrocyanic Acid 1·045—1·050).

Solubility.—Sparingly in water; mixes in all proportions with Rectified Spirit and Ether.

(Belg. and Port. (Essentia), Fr., Swiss, and U.S.; not in the others.)

Chiefly used as a flavouring agent, when the oil "sine Acido Hydrocyanico" should be employed.

AMYGDALA DULCIS.

SWEET ALMOND.

The ripe seed of the sweet almond tree, *Prunus amygdalus, var. dulcis*, imported from Malaga, and known as the Jordan Almond.

Test.—Not bitter nor evolving the odour of Bitter Almonds when bruised with Water.

(In all the foreign Pharmacopœias except Dutch; Fr., Amandes Douces; Port., Amendoas Doces; Span., Almendro Dulce.)

Medicinal Properties.—Demulcent and nutrient; useful in catarrhal affections. Biscuits are made of Jordan and Valencia Almonds, as a substitute for bread or starchy food for diabetic patients.

Preparations.

MISTURA AMYGDALÆ. Almond Emulsion.

Compound Powder of Almonds, 1; Distilled Water, 8: rub the Powder with a little of the Water into a thin paste, add the remainder of the Water, and strain through muslin.

A vehicle for cough medicines.

Dose.—1 to 2 oz.

(Named **Emulsio** in Austr., Belg., Dan., Fr., Ger., Hung., Norw., Port., Russ., Span., Swed. and Swiss; U.S.; there is much variation in the proportions. Not in Dutch.)

OLEUM AMYGDALÆ.

The oil obtained by pressure from either Bitter or Sweet Almonds.

Solubility.—Only slightly soluble in Rectified Spirit, entirely soluble 1 in $2\frac{1}{4}$ of Ether and in all proportions of Chloroform.

Sp. g. ·914 to ·920. It does not congeal until cooled to near —20° C. (—4° F.).

Tests.—On placing 2 drops of concentrated Sulphuric Acid upon about 8 drops of the Oil, on a white plate, no dark colour should appear at the edge of the Acid, and after stirring, the mixture should not assume a dirty yellow colour retaining its tint for several minutes (difference from most other fixed Oils).—*U.S.P.*

The latter part of this test is misleading; we have examined 11 samples (three pressed by ourselves) and find that a dirty yellow is produced and that it lasts at least half an hour.

When 15 parts of the Oil are thoroughly shaken with a mixture of 2 parts of Water and 3 parts of fuming Nitric Acid, a whitish mixture, free from red or brown colour, should be formed, which should separate after several hours into a firm white mass and a nearly colourless liquid.—*Ph. Ger.*

It does *not* form a firm white mass after 18 hours; but it does so with double the amount of the diluted acid.

A colour indicates Sesame, Cotton Seed, or Rape Seed Oils; Olive Oil prevents the mass setting firm.

Dose.—2 to 4 drms.

(Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Port., Russ., Span. (Aceite de Almendras Dulces), Swed., Swiss, and U.S.)

1 oz. Oil, with ½ oz. Mucilage, ¼ oz. Sugar, and 6 oz. of Distilled Water, makes a nice cough mixture.

A mixture of equal parts of this Oil and Lime Water, scented with Lemon, is sold for **Glycerine and Lime Juice.**

Used in the preparation of Oleum Phosphoratum, Unguentum Cetacei, Unguentum Resinæ, and Unguentum Simplex. Used in preference to Olive Oil, as it makes a whiter ointment.

PULVIS AMYGDALÆ COMPOSITUS.

Sweet Almonds, 8; Refined Sugar, 4; Gum Acacia, 1; steep the Almonds in hot Water until their skins can be easily removed, and when blanched, dry them thoroughly with a soft cloth and rub them lightly into a smooth paste, then add the sugar and gum previously mixed; rub together, and pass through a coarse sieve.

Dose.—60 to 120 grains.

(Not in the other Pharmacopœias.)

AMYL NITRIS.

NITRITE OF AMYL.

An ethereal yellowish liquid, consisting chiefly of Nitrite of Amyl, $C_5H_{11}NO_2$, eq. 117, produced by the action of Nitric or Nitrous Acid on Amylic Alcohol, which volatilizes between 262° and 270° F. (or about 128°—132° C.)

Various writers have pointed out the importance of purifying the Amylic Alcohol, until it has a constant boiling point 132° C., previous to using it. Also that the impure Nitrite of Amyl obtained should be washed with Caustic Soda to remove Prussic Acid and other free Acids, and finally rectified over fused Carbonate of Potassium to get rid of the Water, reserving the portion which distils over between 95° and 100° C. (203°—212° F.) for medicinal use.

Brit. Pharm., 1885, has been more explicit about the Amylic Alcohol to be used, but "Nitrite of Amyl" is a fluid which varies in its composition and purity with the process employed for its production. It is also changed by exposure to the air.

Solubility.—Insoluble in Water. Freely soluble in Rectified Spirit, Ether, and Chloroform.

Tests.—Sp. g. about 0·880. Submitted to distillation, about 70 per cent. passes over at 194° to 212° F. (90°—100° C.), the bulb of the thermometer not dipping below the surface of the residual fluid. If it be added drop by drop to Caustic Potash while fused by the application of heat, Valerianate of Potassium will be formed.

(Austr., sp. g. ·902, boils at 95°—98° C.; Belg., sp. g. ·870, boils at 95° C.; Fr., sp. g. ·877, boils at 95° C.; Ger., boils at 97°—99° C.; Hung., sp. g. ·900, boils at 96°—99° C.; Russ., sp. g. ·900, boils at 93° C.; Swiss, sp. g. ·870, boils at 96° C.; U.S., sp. g. ·872—874, boils at about 96° C.)

Medicinal Properties.—Anodyne and antispasmodic. Very useful in angina pectoris, asthma, and nervous headache; has been used with advantage in epilepsy and in trifacial neuralgia, also in laryngeal spasm and intestinal colic. A restorative in cases of defective breathing, or the heart's want of power after Chloroform; has been found useful as an antidote to Strychnine.

Employed successfully in cases of sea-sickness.—*L.* '79, i. 650, 687, 759.

In the after-pains of labour.—*L.* '87, i. 606.

In traumatic tetanus.—*L.* '87, ii. 1253.

Dsoe.—By inhalation, the vapour of 2 to 5 minims; but in mixtures to be swallowed, ½ to 1 minim; to be used with caution.

It can be obtained in small glass tubes covered with cotton wool.

Not Official.

TERTIARY AMYL NITRITE.—Prepared from tertiary Amylic Alcohol (Amyl Hydrate). It possesses all the properties of the Official Nitrite, but it can be taken in larger quantities without danger, and it does not cause flushing of the face.—*P. J.* xix. 161.

Not Official.

AMYLENE HYDRATE.

TERTIARY AMYLIC ALCOHOL. DIMETHYLETHYL CARBINOL.

$(CH_3)_2 C_2H_5, COH.$

Prepared by treating Trimethylethylene with Sulphuric Acid.

A clear, colourless, oily liquid with an odour resembling Paraldehyde.

Sp. g. ·812. Boils at 212° F. Crystallizes at 5° F.

Solubility.—1 in 8 (or rather less) of Water; in all proportions of Rectified Spirit.

Test.—If Amylic Alcohol be present, Valerianic Acid is formed on treatment with Bichromate of Potassium and Sulphuric Acid.

Medicinal Properties.—Hypnotic. Has no unpleasant after-effects, and its taste is less objectionable than that of Paraldehyde.

Produces sleep in all kinds of diseases.

Dose.—50 to 70 minims dissolved in Water or Spirit; sometimes given as an enema.

Note.—This must not be confounded with the Hydrate of Amylene described in Watts' Dictionary, i. 208, which is a syrupy liquid, sp. g. ·897, and boils at 177° C. Physiological action not known.

AMYLUM.

STARCH.

Starch procured from the grains of common wheat, *Triticum sativum*; maize, *Zea mays*; and rice, *Oryza sativa*.

The Brit. Pharm. gives the following microscopic characters:—

1. Wheat Starch: A mixture of large and small granules, which are lenticular in form and marked with faint concentric striæ surrounding a nearly central hilum.

2. Maize Starch: Granules more uniform in size, frequently polygonal, somewhat smaller than the large granules of Wheat Starch, and having a very distinct hilum, but without evident concentric striæ.

3. Rice Starch: Granules extremely minute, nearly uniform in size, polygonal, hilum small and without striæ.

This is the first time that Starches other than Wheat have been recognised in the British or the other Pharmacopœias.

In fine powder or in irregular angular or columnar masses, which when boiled with water and cooled become blue on adding a solution of Iodine. The blue disappears on boiling. When agitated with a little cold Distilled Water the mixture is neither acid nor alkaline to test-paper, and the filtered liquid does not become blue on the addition of Iodine. If rubbed forcibly in a mortar with cold Water, the granules are broken and the blue reaction with Iodine is evident.

Neutral Starch is seldom obtained ; it is, as a rule, alkaline.

(Austr., Belg., Dan., Ger., Hung., Norw., Port., Russ., Span., Swed., Swiss, and U.S. ; Fr., Amidon : all Wheat Starch ; Dutch, Potato Starch ; Port. allows several other Starches.)

Medicinal Properties.—A good application to the face and hands when affected by cutaneous eruptions. In the form of Violet Powder, which is merely scented Starch, it is useful to prevent the low inflammation that may be caused by the chafing of the skin of fat infants. Applied also in cases of inflamed veins. It has been given in powder for diarrhœa.

Used in the preparation of Pulvis Tragacanthæ Composita, Suppositoria Acidi Tannici cum Sapone and Suppositoria Morphinæ cum Sapone.

Preparations.

GLYCERINUM AMYLI. Plasma.

Starch, 1; Glycerine, 5; Distilled Water, 3; stir them well together in a porcelain dish or other suitable vessel, then heat the mixture gradually to 240° F., constantly stirring until a translucent jelly is formed. (By weight 1 in 8½, by measure 1 in 7½).

Note.—Water has been added in this formula with a view to the preparation being less liable to change when kept for some time.

A good application for chilblains and chapped hands.

(Belg., Starch 1, Glycerine 16 (nearly); Dutch, Starch 8, Glycerine 92; Fr., Glycéré d'Amidon, Starch 1, Glycerine 14; Port., Glycerado Commum, Starch 1, Water 2, Glycerine 17; U.S., Glyceritum Amyli, Starch 1, Glycerine 9. The following are called Unguentum Glycerini: Austr. and Norw., Starch 1, Glycerine 15; Dan. and Swed., Starch 2, Water 1, Glycerine 10; Russ., Starch 1, Water 1, Glycerine 14; Swiss, Starch 1, Water 1, Glycerine 4; Ger. and Hung., Tragacanth 1, Alcohol 5, Glycerine 50 (these two do not contain Starch); Span., Starch 1, Glycerine 15.)

Used in the preparation of some suppositoria.

MUCILAGO AMYLI.

Starch, 120 grains; Distilled Water, 10 fluid ounces; boil with stirring, for a few minutes. =(1 grain in 40 minims).

Used in enemas, either in large quantity, as a vehicle for purgatives, or in small quantity for sedatives or astringents, which are to be retained and absorbed. As an enema *per se*, it is soothing and slightly astringent, and is useful in typhoid fever when the object is rather to regulate than arrest the diarrhœa. It is used extensively to stiffen bandages for fractures, &c.

(Fr., Lavement avec l'amidon, 1 in 34; Port., Cozimento de Amido, 1 in 100; Russ., Decoctum, 1 in 49; not in the others.)

Used in the following Official Enemata: Aloes, Magnesii Sulphatis, Opii and Terebinthinæ.

Not Official.

TEST SOLUTION OF STARCH.—Made with Potato Starch, 1 per cent. is a convenient strength. It can be preserved almost indefinitely, as a sensitive reagent for Iodine, by boiling it in a sterilising flask, and plugging both openings with cotton wool.

Not Official.

AMYLUM IODATUM.

Iodine, 5; Starch, 95; Distilled Water, q. s. Triturate the Iodine with a little Distilled Water, add the Starch gradually, and continue triturating until the compound assumes a uniform blue colour approaching black. Dry at a temperature not exceeding 40° C. (104° F.) and rub it to a fine powder.

A teaspoonful thrice daily for Lupus Erythematosus.—*B.M.J.* '80, i. 652.

(U.S., same as above; Russ., Iodine, 1; Starch, 29; Alcohol (95 p. c.), 10; not in the others.)

PASTA AMYLI IODIDI.—Starch, 1 oz.; Glycerine, 2 oz.; Water, 6 oz.: boil together, and when nearly cold add Solution of Iodine, B.P., 1 oz.—*Hosp. for Children.*

ANETHI FRUCTUS.

DILL FRUIT.

The dried fruit of the *Peucedanum graveolens* (an annual), cultivated in Britain or imported from Central and Southern Europe.

(Fr. (Aneth); Port. (Endro); not in the other Pharmacopœias.)

Medicinal Properties.—Stimulant, aromatic, and carminative: chiefly given to children in cases of flatulency, or hiccough; and sometimes given with Bicarbonate of Sodium.

Preparations.

AQUA ANETHI.

Bruised Dill Fruit, 1; Water, 20; distil, 10. =(1 in 10).

(Not in the other Pharmacopœias.)

Dose.—½ to 1 oz.; for children, 60 minims.

OLEUM ANETHI.

The oil distilled in Britain from Dill Fruit.

Sp. g. about ·900. Yield, 2·8 to 3 per cent.

The samples we have examined varied sp. g. ·895—·907.
Readily soluble in Alcohol and Ether.

(Not in the other Pharmacopœias.)

Dose.—1 to 4 minims, on Sugar.

Not Official.

ANILINE.

A colourless, oily liquid. Sp. g. 1·028.

Solubility.—1 in 27 of Water; 5 in 4 of Proof Spirit; mixes in all proportions with Rectified Spirit, Ether and Glycerine.

Medicinal Properties.—Has been used in phthisis by Prof. Kremianski: his treatment is meal powder as nourishment *per os* or *per anum*, Antifebrin to reduce pyrexia, and inhalations of Aniline. A **solution** 1 of Aniline in 7 of Oil of Eucalyptus or Aniseed, or a **mixture** of Aniline 1, Oil of Peppermint 2, Distilled Water 8; which latter was used when the first did not suit the patient.—*B.M.J.* '87, i. 579, *L.* '88, i. 569.

Aniline recommended to be used with a Siegle's Spray.—*L.M.R.* '88, 24.

The treatment reported on unfavourably by a medical committee.—*B.M.J.* '87, i. 789, 842.

ANISI FRUCTUS.

ANISE FRUIT.

The dried fruit of *Pimpinella Anisum.*

(Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Norw., Port., Russ., Span., Swed., Swiss, and U.S.)

Medicinal Properties.—Stimulant, aromatic, and carminative, slightly expectorant; used to relieve flatulence, and to diminish the griping of purgative medicines.

Preparations.

AQUA ANISI.

Bruised Anise Fruit, 1; Water, 20; distil, 10.

(Belg., from Oil and Alcohol; Fr., Port., Span. and Swiss, from Fruits; Russ. and U.S. from Oil; not in the other Pharmacopœias.)

Dose.—½ to 1 oz.

OLEUM ANISI.—*See* ANISI OLEUM.

(Austr., Belg. (Essentia), Dan., Dutch, Fr., Ger., Hung., Norw., Port., Russ., Span., Swed., Swiss, and U.S.)

ANISI STELLATI FRUCTUS.

STAR ANISE FRUIT.

The dried fruit of *Illicium Anisatum*, from plants cultivated in China.

(Austr., Belg., Dan., Fr., Hung., Port. (Aniz Estrellado), Russ., Span., Swed., Swiss, and U.S.; not in Dutch, Ger., or Norw.)

Preparation.

OLEUM ANISI.—*See* ANISI OLEUM.

(Belg., Port. and U.S.; not in the others.)

ANISI OLEUM.

OIL OF ANISE.

The oil distilled in Europe from Anise Fruit (yields about 2 per cent.), or distilled in China from Star Anise Fruit (yields 4 to 5 per cent.), and imported.

As in the P. B., 1867, both the European and Chinese Oils of Anise are Official.

Colourless, or a very pale yellow.

Solubility.—1 of Pimpinella Oil in 3 of Rectified Spirit; 1 of Illicium Oil in 4 of Rectified Spirit (a slight rise in temperature greatly increases the solubility in Rectified Spirit); both oils dissolve in all proportions of Absolute Alcohol; 1 of Pimpinella Oil in 200 of Proof Spirit, at which point the Illicium Oil is distinctly turbid.

These variations in solubility seem to arise from the presence in the Illicium Oil of a small proportion of a much less soluble Oil, which is absent in the Pimpinella.

The true congealing point of Oil of Anise should be the temperature to which the thermometer rises when solidification takes place, and this is between 50° and 60° F. (10° to 15·5° C.) with both Oils of Anise, Pimpinella and Illicium. The two oils can be distinguished from one another by their different odours and by Eykmann's test—a saturated solution of Hydrochloric Acid Gas in Absolute Alcohol—which gives a manganese pink with Pimpinella Oil and a pale brown colour with Illicium Oil (*Umney*).

We find, however, that Eykmann's test is by no means definite.

Of 5 samples tested, 3 (Pimpinella) gave a blue colour; 1 (Illicium) gave a pink; 1 (Illicium) gave a yellow colour.

The bulk of Anise Oil in England is stated to be obtained from *Illicium anisatum*; but on the Continent the Pimpinella Oil is that principally used, and it is Official in all the Pharmacopœias compared in this work; the Illicium is Official in but three of them, Belg., Port., and U.S.

Sp. g. about ·980, which increases with age.

(Belg., sp. g. ·972—·995; Austr., Dutch, Ger. and Russ. sp. g. ·980—·990; Hung., sp.g. ·978—·984; Port., sp. g. ·977—·983; U.S., sp. g. ·976—·990; the others do not give sp. g.)

(For full list of Pharmacopœias and source of Oil, *see* under Fructus.)

Dose.—1 to 4 minims, on sugar.

Contained in Tinctura Camphoræ Comp. and Tinctura Opii Ammoniata.

Preparation.

ESSENTIA ANISI.

Oil of Anise, 1; Rectified Spirit, 4; mix. =(1 in 5).

(Belg., 1 Oil in 100; Fr., 1 Oil in 50; U.S. Spiritus, 1 Oil in 10 (all by weight); Austr., 1 of seeds in 6; Span., 1 of seeds in 6 (distilled); not in the others.

Dose.—10 to 20 minims.

Not Official.

TINCTURA ANISI (Fr. and Russ.)—Anise Fruit, 1; Rectified Spirit, 5.

ANISIC ACID.—It occurs in shining acicular crystals obtained by the oxidation of Oil of Anise or Anethol.

Solubility.—Almost insoluble in cold Water, 1 in 700 boiling Water; 1 in 36 of Rectified Spirit; 1 in 50 of Ether.

ANISATE OF SODIUM.—In rhombic crystals, frequently efflorescent, with a slight aromatic odour.

Solubility.—1 in 5 of Water; 1 in 6 of Proof Spirit; 1 in 24 of Rectified Spirit.

Anisic Acid and its Sodium Salt have been stated to possess antiseptic and antipyretic properties, similar to Salicylic Acid.

ANTHEMIDIS FLORES.

CHAMOMILE FLOWERS.

The dried flower-heads of *Anthemis nobilis* (perennial), single and double, from cultivated plants.

They contain a volatile oil from which Angelic and Tiglinic Acids (about 30 per cent.) can be extracted, also a bitter principle, which is soluble in Water and Alcohol.

Angelic Acid is converted into Tiglic Acid by the action of heat.

(Austr., Belg., Dan., Dutch, Fr., Port., Russ., Span. (Manzanilla), Swiss, and U.S.; not in the others; also Matricaria in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Norw., Russ., Span. (Manzanilla Comun), Swed., Swiss, and U.S.)

Medicinal Properties.—Tonic, aromatic, and stomachic. In large doses, emetic. The infusion taken early every morning is useful in atonic dyspepsia, and externally as a fomentation for bruises and inflammation.

Preparations.

EXTRACTUM ANTHEMIDIS.

Chamomile Flowers, 16 oz.; Oil of Chamomile, 15 minims; Distilled Water, a gallon; boil the flowers in the Water till the volume is reduced to one-half, then strain, press, and filter; evaporate the filtered liquor by a water bath to a pill consistence, adding the Oil of Chamomile at the end of the process.

The double flowers yield about 30 per cent. of Extract.

Dose.—2 to 10 grains.

(Belg., from Anthemis; Fr., from both; Dan., Russ., Swed. and Swiss, from Matricaria; not in the others.)

INFUSUM ANTHEMIDIS.

Chamomile Flowers, $\frac{1}{2}$; boiling distilled Water, 10; infuse for fifteen minutes in a covered vessel, and strain. =(1 in 20).

Dose.—As a stomachic, 1 to 3 oz.; as an emetic, 5 to 10 oz.

(Fr. (Tisane) 1 in 200; Span. 1 in 69; not in the others.)

OLEUM ANTHEMIDIS.

Distilled in Britain from the flowers.

Sp. g. ·905—·915. Pale blue or greenish blue, gradually becoming yellowish brown by keeping.

Solubility.—Sparingly in Water; 10 in 3 of Rectified Spirit; 1 in 40 Proof Spirit, forms an opalescent solution.

1 cwt. of flower-heads yields about $1\frac{1}{2}$ oz. Essential Oil.

Dose.—1 to 4 minims.

(Span. (Anthemis); Fr. (Anthemis and Matricaria); Belg. and Swiss (Matricaria); Russ. and Swiss, Oleum Chamomillæ Citratum (contains Oil of Lemon); not in the others.)

Stimulant and carminative. Prescribed in pills with Rhubarb or other powder.

Not Official.

AQUA ANTHEMIDIS.—Flowers 1; Water 20; distil 10.

(Austr., Dan. and Swiss, 1 in 10; Belg., 1 in 5; Fr., Port., and Span., 1 in 4; Swed., 1 in 7; Russ., Conc. 12 in 15, and mix 1 Conc. with 7 Distilled Water; all distilled. Belg., Port., and Span., from Anthemis; Austr., Dan., Dutch, and Swed., from Matricaria; Fr. and Russ., from both.)

OLEUM CHAMOMILLÆ INFUSUM.—Chamomile Flowers 1; Olive Oil 10; digest in a water-bath for 2 hours, strain, press, and filter.

(Fr. and Port., 1 in 10; Span., 1 in 8; from Anthemis. Belg., 1 in 10; Norw. and Swiss, 1 in 5, from Matricaria.)

TINCTURA ANTHEMIDIS.—Single Chamomiles carefully dried, 1; sufficient Rectified Spirit to percolate 8: or an equivalent quantity of fresh flowers (about 3), and macerate with 8 of Rectified Spirit for 7 days, and press.

The moisture in the fresh flowers reduces the strength of the spirit so that less resin is dissolved.

Not Official.

ANTIFEBRIN.

ACETANILIDE. PHENYLACETAMIDE.

$C_6H_5NH, C_2H_3O.$

Prepared by prolonged heating together of Aniline and Glacial Acetic Acid, then distilling the acetanilide, and purifying it by crystallization.

White crystalline scales, without odour and scarcely any taste. Reaction neutral. Should evaporate without leaving a residue. Boils at 295° C.

Solubility.—1 in 190 of Water; 1 in 25 of boiling Water; 1 in 4 of Rectified Spirit.

Tests.—Heated in a capsule with Mercuric Nitrate, it gives an intense green colour, soluble in Alcohol. It should give no orange-red colour with Sodium Hypobromite Solution (indicating absence of Aniline).

(Austr., Dutch, and Hung.; not in the other Pharmacopœias.)

Medicinal Properties.—Antipyretic and antiseptic. Useful in typhoid fever, erysipelas, phthisis, rheumatism and small-pox. An anodyne in neuralgia and nerve affections.

In some cases it produces profuse sweating, accompanied with cyanosis and rigor; it is therefore safer to commence with small doses.

References.—*L.* '86, ii. 462. Nervous affections, *L.* '87, i. 41, 104; *B.M.J.* '87, ii. 431; *L.* '88, i. 191. Phthisis, *B.M.J.* '87, i. 590; '87, ii. 1396. Typhoid, *T.G.* '87, 123. Small-pox, *T.G.* '88, 630. Summary, *B.M.J.* '87, ii. 1438; *T.G.* '88, 571.

Dose.—4 to 15 grains, not exceeding 30 grains in 24 hours. 1 to 2 grains for children about 4 years old.

Best given in wafer paper or cachets, or dissolved in some weak spirit.

Not Official.

ANTIMONIUM.

ANTIMONY.

Sb, eq. 120.

Of a silvery-white colour, brittle and crystalline. Sp. g. 6·7.

This metal rarely occurs native, but generally as the black sulphuret (Sulphide), the Stibium of the ancients. It was first made known in the metallic state by Basil Valentine towards the end of the fifteenth century. It is prepared on the large scale by roasting the sulphuret (mixed with charcoal to prevent caking) until it is converted into oxide, which is then reduced by means of Charcoal and Carbonate of Potassium. It is extensively employed in the manufacture of type-metal and the alloy known as Britannia metal. It melts at about 800° F., and as the ingot cools, its surface has a beautiful stellated appearance: the alchemist considered this star as a mysterious guide to the secrets of transmutation. It is volatile at a white heat.

(Span.; not in the others.)

ANTIMONII CHLORIDI LIQUOR.

SOLUTION OF CHLORIDE OF ANTIMONY.

Chloride of Antimony, $SbCl_3$, eq. 226·5, dissolved in Hydrochloric Acid. It contains 36·7 per cent. of $SbCl_3$.

A yellowish-red liquor; prepared by boiling Purified Black Antimony in Hydrochloric Acid; introduced chiefly for the purpose of preparing the Oxide of Antimony.

Test.—Sp. g. 1·470. 1 fluid drm., mixed with a solution of ¼ oz. of Tartaric Acid in 4 oz. of Water, forms a clear solution, which, if treated with Sulphuretted Hydrogen, gives an orange precipitate, weighing, when washed and dried at 212° F. (100° C.), at least 22 grs.

(Fr. and Port. a crystalline mass; Belg., sp. g. 1·40—1·44; Dan., sp. g. 1·44—1·45; Port., saturated, sp. g. not given; Russ., sp. g. 1·34—1·36; Span.; Swiss, sp. g. 1·34—1·35; not in the others.)

Medicinal Properties.—A caustic; it usually acts without causing much pain or inflammation, and after the separation of the eschar, forms a clean healthy ulcer. Sometimes applied to cancerous growths and poisoned wounds. Never used internally.

Antidotes.—Magnesia, Carbonate of Sodium.

ANTIMONII OXIDUM.

OXIDE OF ANTIMONY.

Sb_2O_3, eq. 288.

A greyish-white powder, fusible at a low red heat.

Prepared by decomposing a solution of Chloride of Antimony with Carbonate of Sodium.

Solubility.—Insoluble in Water, Alcohol, and Nitric Acid; readily soluble in Hydrochloric Acid and warm solution of Tartaric Acid.

Test.—Dissolves entirely when boiled with an excess of Acid Tartrate of Potassium—indicating absence of other oxides of Antimony.

The solution in Hydrochloric Acid, when mixed with Distilled Water, forms a white precipitate, which is changed to orange by Sulphuretted Hydrogen.

A solution of Oxide of Antimony in an excess of Tartaric Acid should yield no precipitate with test-solutions of Nitrate of Silver (Chloride), Chloride of Barium (Sulphate), or Ferrocyanide of Potassium (Iron and other metals).—*U.S. Ph.*

(Belg. and Dan. (Oxidum Stibicum); Port., Span. and U.S.; Swiss (impure Oxide); not in the others.)

Medicinal Properties.—Diaphoretic. Less active than the tartrate. Emetic in large doses.

Dose.—1 to 3 grs. in a pill.

Used in the preparation of Antimonium Tartaratum.

Preparation.

PULVIS ANTIMONIALIS.

Oxide of Antimony, 1; Phosphate of Calcium, 2; mix. =(1 in 3).

Dose.—2 to 6 grs.

(Belg., Oxide of Antimony 334, Phosphate of Lime 666; Port., Oxide of Antimony 35, Phosphate of Lime 65; Swiss, same as Brit.; U.S., Oxide of Antimony 33, Precipitated Phosphate of Calcium 67; not in the others.)

The following analysis was made by Robert Scott, of Dublin, of a very old packet of James's Fever Powder (bearing Messrs. Newbery's name) for the British Pharmacopœia Committee:—

Soluble in Water—	Antimonite of Lime	·095
	Sulphate of Lime	·267
	Alkaline Salts	·220
Insoluble in Water—	Antimonious Acid	33·216
	Teroxide of Antimony	·601
	Phosphate of Lime	62·124
	Lime	1·954
	Residue	1·603
	Loss	·502
		100·000

ANTIMONIUM NIGRUM PURIFICATUM.

PURIFIED BLACK ANTIMONY.

Syn. Prepared Sulphuret of Antimony.

Native Sulphide of Antimony, Sb_2S_3, eq. 336, purified from Siliceous matter by fusion, and reduced to fine powder, and if any soluble Salt of Arsenium be present, must be repurified with solution of Ammonia.

Dissolves almost entirely in boiling Hydrochloric Acid, evolving

Sulphuretted Hydrogen, and the solution affords a white precipitate when poured into Water.

(Belg., Dan., Fr., Norw., Port., Russ., Swed., Swiss and U.S.; not in the others.)

Used to prepare Antimonium Sulphuratum and Liquor Antimonii Chloridi.

ANTIMONIUM SULPHURATUM.

SULPHURATED ANTIMONY.

Syn. Antimonii Oxysulphuretum; Antimonii Sulphuretum Aureum; Antimonii Sulphuretum Præcipitatum.

Sulphide of Antimony, Sb_2S_5, with a small and variable amount of Oxide of Antimony, Sb_2O_3.

It also contains a considerable quantity of free Sulphur; 3 commercial samples contained 20, 31, and 40 per cent., while a specimen prepared by the B. P. process yielded 12 per cent.

A bright orange or golden-red powder, without odour and with a slight taste.

Solubility.—Insoluble in Water; dissolves readily in Caustic Soda, also in hot Hydrochloric Acid.

Test.—60 grains moistened and warmed with successive portions of Nitric Acid until red fumes cease to be evolved, and then dried and heated to redness, gives a white residue weighing about 40 grains.

Distilled Water boiled with Sulphurated Antimony, filtered and acidulated with Hydrochloric Acid, should be rendered not more than slightly opalescent by test solution of Chloride of Barium (limit of Sulphate).—*U.S.P.*

(U.S., Antimonium Sulphuratum; Austr., Belg., Ger., Hung., Russ. and Swiss, Stibium Sulphuratum Aurantiacum; Dan., Dutch, Norw., and Swed., Sulphidum Stibicum; Fr., Soufre Doré d'Antimoine; Port., Enxofre Dourado de Antimonio; Span., Sulfuro Antimonico Sulfurado.)

Medicinal Properties.—Alterative, diaphoretic, and emetic; uncertain in action from its slight solubility, depending on the acidity of the stomach. Usually prescribed with Calomel and Guaiacum, as in Pilula Hydrargyri Subchloridi Composita, for secondary syphilis and cutaneous eruptions; or with Henbane or Hemlock in chronic rheumatism.

It is largely used for vulcanising red india-rubber.

Dose.—1 to 5 grs. in pill.

Contained in Pilula Hydrargyri Subchloridi Composita.

ANTIMONIUM TARTARATUM.

TARTARATED ANTIMONY. TARTAR EMETIC.

An Oxytartrate of Antimony and Potassium $(KSbOC_4H_4O_6)_2H_2O$, eq. 664.

In colourless transparent crystals, exhibiting triangular facets, which are liable to loss of Water by efflorescence. To obviate this variation Dunstan has proposed to use the Anhydrous Salt, prepared by precipitating a strong Aqueous Solution of Tartar Emetic with a large excess of Methylated Spirit, the precipitate decanted or filtered, washed with Methylated Spirit, and quickly dried over a water-bath. 1 of the Anhydrous Salt dissolves in 14·53 of Water.

Solubility.—1 in 15 of cold Water (slowly); 1 in 2 of Boiling Water, sparingly soluble in Proof Spirit; insoluble in Rectified Spirit.

Tests.—Its solution in Water gives with Hydrochloric Acid a white precipitate, soluble in excess, which is not formed if Tartaric Acid be previously added. 29 grs. (after some time) dissolve without residue in a fluid ounce of Distilled Water at 60° F. (15·5° C.), and the solution gives with Sulphuretted Hydrogen an orange precipitate which, when washed and dried at 212° F. (100° C.), weighs 15·1 grs. (Golden Sulphuret of Antimony.)

Dunstan points out that the theoretical weight of Sulphide precipitated is only 14·67 grains, and that the above process is also liable to other errors. He proposes the following:—Dissolve ·3 gramme of Tartar Emetic in 80 c. c. of Water, add to this 10 c. c. of a 5 p. c. solution of Bicarbonate of Sodium, and immediately titrate with $\frac{N}{10}$ solution of Iodine, using Starch solution as an indicator. The Alkali must be added not long before the titration, or the Antimony will be precipitated.—*P. J.* xix. 385.

1 c. c. $\frac{N}{10}$ solution of Iodine = ·0166 gramme Tartar Emetic, therefore the quantity required for ·3 gramme will be 18 c.c.

(Austr., Stibium Kalio-Tartaricum; Belg., Tartras Antimonico Potassicus; Dan., Norw., and Swed. Tartras Stibico-Kalicus; Dutch, Tartras Kalico-Stibicus; Fr., Tartrate d'Antimoine et de Potasse; Ger. and Swiss, Tartarus Stibiatus; Hung., Kalium Stibio-Tartaricum; Port., Tartrato de Potassa e do Antimonio; Russ., Stibio-Kali Tartaricum; Span., Tartrato Antimonico Potasico; U.S., Antimonii et Potassii Tartras.)

Medicinal Properties.—Diaphoretic, expectorant, and emetic. In continued small doses it relaxes, and causes increased secretion from the mucous membranes and skin, and is a *depressant* to the whole vascular system.

As a febrifuge, it is given with great effect in acute pneumonia and bronchitis, and for reducing inflammation generally.

Externally, in the form of ointment, it acts as a powerful counter-irritant to the skin, producing a pustular eruption.

Dose.—As a diaphoretic, $\frac{1}{16}$ to $\frac{1}{6}$ gr.; as a depressant, $\frac{1}{6}$ to 1 gr.; as an emetic, 1 to 2 grs. Best prescribed in aqueous solution or as the Vinum, which may be given with Tinct. Lavand. Co. and Bitter Almond Emulsion.

Incompatibles.—Gallic and Tannic Acids, the Alkalies and their Carbonates, and Lead Salts. Astringent infusions, as Cinchona, Rhubarb, &c.

Antidotes.—Tannic or Gallic Acid, Catechu, vegetable astringents, Tea or Coffee, stimulants if much collapse.

Preparations.

UNGUENTUM ANTIMONII TARTARATI.

Tartarated Antimony in fine powder, 1; Simple Ointment, 4; mix. =(1 in 5).

(Hung., Ung. Autenriethi 1 in 5; Ung. Tartari Stibiati, Belg., 1 in 6·6; Ger. and Swiss, 1 in 5; Dutch, Ung. Tartratis Kalico-Stibici, 1 in 5; Fr., Pommade Stibiée, 1 in 4; Norw., Ung. Stibiatum, 1 in 5; Port. and Span., Pomada Estibiada, 1 in 4; Russ., Ung. Stibio-Kali Tartarici, 1 in 5; not in the others.)

VINUM ANTIMONIALE.

Tartarated Antimony, 40 grs.; Sherry, 20 oz.: dissolve, and filter if necessary. = (1 in 219).

Note.—The Tartarated Antimony does not dissolve in the Sherry readily; it is better to dissolve it in about ten times its weight of hot Water, and then add the Wine. Each fluid drachm contains $\frac{1}{4}$ grain.

Dose.—5 to 30 minims as a diaphoretic, in saline mixtures combined with Mindererus Spirit to relieve cough. 2 mins. for a child one year old.

(Vinum Stibiatum, Dan., Dutch, Ger., and Norw., 1 in 250; Span., Vino de Tartrato Antimonico Potasico, 1 in 230; U.S., Vinum Antimonii, 1 in 250; all with Sherry. Austr., Vinum Stibii Kalio-Tartarici, 1 in 250; Hung., Vinum Stibiato-Tartaricum, 1 in 240; Belg., Vinum Antimoniatum, 1 in 200; Russ., Vinum Stibio-Kali Tartarici, 1 in 240; Swed. and Swiss, Vinum Stibiatum, 1 in 250; all with Malaga Wine. Port., Vinho Antimonial, 1 in 200 of Port Wine. All by weight. Not in Fr.)

Not Official.

ANTIPYRIN.

DIMETHYLOXYCHINIZIN.

$C_{11}H_{12}N_2O$, eq. 188.

A synthetically prepared alkaloidal compound, reported upon by Professor Filehne and others as possessing valuable antipyretic properties.

In fair-sized prismatic colourless crystals or as a nearly white crystalline powder, with a scarcely perceptible odour and mildly bitter taste; when completely dried melts at 110° C.

Solubility.—1 in 1 of Water; 3 in 4 of Rectified Spirit; about 5 in 6 of Chloroform; 1 in 40 of Ether.

Tests.—The aqueous solution (1 in 1000) treated with Spiritus Ætheris Nitrosi gives a characteristic green colour in about a minute. 2 c. c. (1 in 1000) gives with 1 drop of solution of Perchloride of Iron a deep red colour, which upon the addition of 10 drops of concentrated Sulphuric Acid passes into bright yellow. An aqueous solution (1 in 2) should be neutral, colourless, free from acridity, and not altered by Sulphuretted Hydrogen.

(Austr., Dutch, and Hung.; not in the other Pharmacopœias.)

Medicinal Properties.—Antipyretic and antiseptic; also anodyne in neuralgia and gout. Given in doses of 60 to 90 grains, generally in 2 or 3 portions at an hour's interval in powder or solution, the general effect is a depression of temperature for at least 5 hours. The temperature falls gradually and continuously to the extent of 2° to 4° F., accompanied by a fall in pulse rate and, in cases of great depression, with profuse sweating. Injected subcutaneously, it has a more powerful and rapid influence, 30 grains thus injected being equal to 60—90 grains taken by the mouth. —*L.* '84, ii. 32.

A specific in acute rheumatism, *L.* '85, ii. 642, *L.* '86, ii. 876, *B.M.J.* '86, ii. 601. An anodyne for neuralgia, *L.* '87, i. 907; in migraine, *L.* '87, ii. 1163, *B.M.J.* '87, ii. 123, *L.* '89, ii. 790; in sciatica, *B.M.J.* '89, i. 610, 710. Relieves ocular pain and ciliary neuralgia in various eye diseases (glaucoma, &c.), *L.* '86, i. 708, *B.M.J.* '88, i. 1360. A uterine sedative, *B.M.J.* '87, ii. 1349. Recommended in hectic fever, *L.* '87, i. 284, *B.M.J.* '85, ii. 602; in hay fever, *B.M.J.* '88, i. 40; in chorea, *L.* '88, i. 39, 157, *L.M.R.* '88, 311, *T.G.* '88, 249; in sunstroke (large doses), *B.M.J.* '87, i. 930; to arrest hæmoptysis, *B.M.J.* '87, ii. 1349; in the early stages of whooping cough, *T.G.* '88, 84, 608; in febrile affections of children, *T.G.* '85, 130; in laryngismus stridulus, *L.* '88, ii. 961; in kidney diseases, *B.M.J.* '88, i. 1185, *L.* '89, ii. 431; in diabetes, *L.* '89, i. 812. A failure in sea-sickness, *M.P.* '88, i. 541. 10 grains daily as an agalactic, *L.M.R.* '88, 290. 50 p. c. solution hypodermically as a local anæsthetic, *B.M.J.* '88, ii. 1124. Sometimes produces a rash resembling measles, *B.M.J.* '87, i. 111, 210. Toxic effects produced, *B.M.J.* '86, ii. 788; '87, ii. 431; '88, i. 243, 258; *L.* '88, i. 364; *T.G.* '87, 542.

It is contra-indicated in cardiac weakness, and cases of extreme exhaustion.—*T.G.* '89, 457; also during the menstrual period, *L.M.R.* '89, 51.

Dose.—10 to 30 grains hourly, dissolved in Water. For *children* 1½ grains per hour for each year of age.

For hypodermic injection it is dissolved in equal parts of Water, or 1 part in 2 parts of Water; where a large dose is required for injection it is sometimes combined with small doses of Cocaine.

Incompatibles.—Spiritus Ætheris Nitrosi.

Not Official.

APIOL.

A greenish-brown oily liquid, obtained from the fruits of *Apium petroselinum*, with a peculiar odour and disagreeable taste.

As it has been stated that Apiol is a non-volatile oil, we may note that Apiol obtained by us from the capsules of MM. Homolle was volatile in the vapour of water to the extent of 95 p. c.

(Belg. and Port., Apiol; Norw., Ætheroleum Petroselini; Russ., Oleum Petroselini.)

It is useful in amenorrhœa and dysmenorrhœa.—*L.* '85, i. 59; *T.G.* '86, 239.

Not Official.

APOCYNUM U.S.

CANADIAN HEMP.

The root of *Apocynum Cannabinum* is Official in U.S P.

It has been used in the United States as a **Decoction,** 1 Root in 60 of Water, boil to 40 (dose $\frac{1}{2}$ to 1 oz.), and given with good effect as a diuretic in dropsy.—*L.* '85, ii. 86; *L.* '86, i. 508; *B.M.J.* '87, i. 522.

Also as a **fluid extract** (dose 5 to 15 minims) in pleurisy with effusion.—*T.G.* '87, 29.

It also possesses emetic and cathartic properties; and as it is a drastic purgative, it should be given with some caution.

TINCTURA APOCYNI.—Root, 1; Proof Spirit, 10.

Dose.—5 to 10 minims, as a cardiac tonic, and diuretic in cardiac dropsy.—*T.G.* '89, 585.

APOMORPHINÆ HYDROCHLORAS.

HYDROCHLORATE OF APOMORPHINE.

$C_{17}H_{17}NO_2$, HCl, eq. 303·5.

The Hydrochlorate of an alkaloid obtained by heating Morphine or Codeine in sealed tubes with Hydrochloric Acid.

Small greyish white shining acicular crystals, turning green on exposure to light and air, with a very faint acid reaction on moistened Litmus paper.

NOTE.—It should be kept in small well-stoppered vials in a dark place.

Solubility.—1 in 70 of Water; 1 in 50 of Rectified Spirit; nearly insoluble in Chloroform and in Ether.

Its aqueous solution on being gently warmed rapidly turns green.

Tests.—Solution of Bicarbonate of Sodium added to an aqueous solution of the Salt throws down the white amorphous alkaloid, which becomes green on standing, and forms a bluish-green solution with Alcohol, a purple one with Ether or pure Benzol, and violet with Chloroform; with dilute solution of Perchloride of Iron it gives a deep red, and with Nitric Acid a blood-red coloration.

P.G. maximum single dose $\frac{1}{7}$ grain; maximum daily dose $\frac{3}{4}$ grain.

(Austr., Dutch, Ger., Hung. and U.S.; Fr., Apomorphine; not in the others.)

Medicinal Properties.—It is a powerful emetic, and usually acts promptly without the production of much preceding nausea or depression. It is therefore useful as a hypodermic injection in cases of poisoning; usual dose $\frac{1}{10}$th grain = 5 minims of the injection.

Has been used in bronchial catarrh, *L.M.R.* '81, 148; as an expectorant for children and adults, given with Hydrochloric Acid and Syrup, *L.M.R.* '82, 497; a sedative in nervous affections, *L.* '84, ii. 1166; in croup and bronchitis, *B.M.J.* '85, ii. 748; in coughs, *L.* '87, ii. 497; $\frac{1}{60}$ to $\frac{1}{40}$ grain given as an expectorant to children in capillary bronchitis and croup, *T.G.* '87, 657; as an emetic, *B.M.J.* '89, i. 339, 394, 885.

Preparation.

INJECTIO APOMORPHINÆ HYPODERMICA.

Hydrochlorate of Apomorphine, 2 grs.; Camphor Water, 100 mins.: dissolve and filter. The solution should be made as required for use.

B. P. Dose, by subcutaneous injection.—2 to 8 minims ($=\frac{1}{25}$ — $\frac{1}{6}$th grain).

Not Official.

SYRUPUS APOMORPHINÆ HYDROCHLORATIS (*B.P.C.*).—Hydrochlorate of Apomorphine, 5 grains; Diluted Hydrochloric Acid, 2 fl. drs.; Rectified Spirit, 7 fl. drs.; Distilled Water, 7 fl. drs.; Syrup, 18 fl. ozs.; dissolve the Salt in the Spirit and Water mixed, then add the Acid and the Syrup.

Dose.—$\frac{1}{2}$ to 1 fluid drachm.

AQUA.

WATER.*

The Pharmacopœia orders the purest Water that can be obtained, cleared, if necessary, by filtration, free from odour, unusual taste, and visible impurity, to be used whenever "Water" is ordered in the British Pharmacopœia. In dispensing prescriptions, Aqua should be understood to mean Distilled Water. Water obtained in different localities varies much in respect to its purity, and the earthy and saline matters *actually dissolved* in it cannot be separated by filtration alone.

The purest water is from the Wenham Lake ice and the Norwegian ice. After these may be taken Distilled Water and snow-water. Rain-water contains about a millionth part of Ammonia, and probably about the same amount of Chloride of Sodium. The following table will show how great a difference exists in the quantity of Lime and saline matters dissolved in various natural waters :—

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* One cannot resist expressing a few thoughts on this all-important fluid, without which all animal and vegetable life must cease. Water exists in the liquid, solid, and gaseous states, and on one or other of these we mainly depend for our mechanical power and our mode of travelling by sea and by rail. Its beauty is shown in the clouds, the rainbow, the dew, hoar-frost, crystals of snow, and the glaciers. Water is endowed with the remarkable property of being at its greatest density at the temperature of 39·5° F., so that ice at 32° F. floats upon it, and aquatic life is preserved in the coldest winter.

Twenty-five measured ounces at 212° become 24 at 60° F., and $23\frac{3}{4}$ at 39·5° F., its greatest density.

The pressure of the atmosphere will support 36 feet of Water, and a Water Barometer was erected in the Royal Society's House, by Professor Daniel, and 3000 hourly observations were made, comparing it with the Standard and the Mountain Barometers, and it was found uniformly to be an hour in precession of them in the changes. R. S. Trans. 1832.

A Glycerine Barometer is now in use at Printing House Square, and the markings are reported in the *Times*, 323 inches of the Glycerine Barometer being equal to 30·35 inches of the Mercurial Barometer.

Loch Katrine, supplying Glasgow,	contains	2	grs. in the gallon.
River Dee ,, Aberdeen	,,	4	,,
,, Tay ,, Perth	,,	5	,,
Water supplied to Liverpool	,,	5	,,
Claremont Water	,,	5·7	,,
Farnham, in Surrey	,,	7·25	,,
Thames, supplying London	,,	19 to 22	,, according to locality.
Water supplied to Watford	,,	22·75	,,
Spring Water	,,	40 to 60	,,
River Jordan	,,	75	,,
,, after 3 weeks' rain	,,	65	,,
Sea-water, shores of the Baltic	,,	1100	,,
,, Firth of Forth	,,	2100	,,
,, off Boulogne	,,	2240	,,
,, German Ocean	,,	2380	,,
,, open Atlantic, Canaries	,,	2450	,,
,, English Channel, near Havre		2520	,,
,, Bay of Biscay, Bayonne	,,	2660	,,
,, Mediterranean, Marseilles	,,	2870	,,
Dead Sea Water (sp. gr. 1·211)		17200 (Marcet).	
,, after 3 weeks' rain (sp. gr. 1·180 Squire).			

Professor Clark, of Aberdeen, invented a soap test,* made by dissolving 1 oz. of white curd soap in one gallon of Proof Spirit, to ascertain the amount of Lime in Water; and proposed a method of softening all waters impregnated with Carbonate of Calcium held in solution by Carbonic Acid, by adding so much lime-water as is capable of uniting with the Carbonic Acid. The whole of the Carbonate of Calcium in the water, as well as that produced by the action of the Carbonic Acid upon the lime-water added, is precipitated, leaving the water comparatively pure. By this process three-fourths of the hardness of Thames water are removed; and the water which rises at Watford from the Chalk is reduced by Clark's process from 18 degrees of hardness to 2 or 3 degrees. Care, however, must be taken not to add more lime-water than is just sufficient for the purpose, otherwise this agent will contaminate the water. For further particulars the reader is referred to the *Pharmaceutical Journal*, vol. vi. p. 526 (May, 1847).

The Thames water, when supplied for long voyages, after being kept in tanks about four months, undergoes a kind of fermentation, which lasts for a few weeks, and after this change the water becomes bright, pleasant to drink, and will keep for months or years without further change, a property which belongs to scarcely any other river water.

Attention has been drawn to the contamination of drinking waters by the infiltration of sewage; and several wells, previously esteemed for the brilliancy and cool taste of the water, have since been abandoned as being totally unfit for drinking or culinary purposes.

AQUA DESTILLATA. H_2O, eq. 18.

Purest water distilled through a block-tin worm, rejecting the first portion that comes over, and distilling only four-fifths of the whole.

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* For a more exact method of preparing Soap Solution from Oleic Acid and Caustic Soda, *see P.J.* xiii. 211.

Tests.—A fluid ounce evaporated in a clean glass (or preferably platinum) capsule leaves scarcely a visible residue.

The transparency and colour of Distilled Water when fresh drawn should not be affected by Lime Water, Hydrosulphuric Acid, Chloride of Barium, Oxalate of Ammonium, Nitrate of Silver, or a mixture of Starch Mucilage and Iodide of Potassium. It should not give an immediate coloration when a solution of Potassio-mercuric Iodide (Nessler reagent) is added to 3 or 4 oz.

Distilled water has, when freshly drawn, an unpleasant odour, which is removed by passing it through a charcoal filter, or by exposing it to air, but Carbonic Acid is in that case absorbed by it, and Subacetate of Lead will then render it milky. If water is distilled through leaden pipes, it becomes impregnated with Lead; the same is the case with natural soft water passing through leaden pipes. The royal buckhounds were poisoned at Ascot from this cause. Zinc wire reaching the whole length of the column of water so impregnated displaces the Lead. Water containing Sulphate of Calcium seems less likely to become impregnated with Lead than that containing the Chlorides.

The waters of the British Pharmacopœia, which are all distilled, except Aq. Camphoræ and Aq. Chloroformi, are as follows; the formulæ are given under the names of the substances from which they are prepared.

AQUA ANETHI. From the dried fruit.	Dose, ½ to 1 oz.
AQUA ANISI. From dried Anise fruit.	½ to 1 oz.
AQUA AURANTII FLORIS. From the flowers. Imported.	½ to 1 oz.
AQUA CAMPHORÆ. (Formerly Mistura Camphoræ.)	1 to 2 oz.
AQUA CARUI. From the dried fruit.	1 to 2 oz.
AQUA CHLOROFORMI.	½ to 1 oz.
AQUA CINNAMOMI. From the bark.	½ to 1 oz.
AQUA DESTILLATA.	
AQUA FŒNICULI. From the dried fruit.	1 to 2 oz.
AQUA LAUROCERASI. From fresh leaves.	10 to 60 min.
AQUA MENTHÆ PIPERITÆ. With oil and distilled.	1 to 2 oz.
AQUA MENTHÆ VIRIDIS. With oil and distilled.	1 to 2 oz.
AQUA PIMENTÆ. From the dried unripe berries.	1 to 2 oz.
AQUA ROSÆ. From the fresh petals.	½ to 1 oz.
AQUA SAMBUCI. From the fresh flowers.	½ to 1 oz.

It was thought proper in former Pharmacopœias to add spirit to the several distilled Medicated Waters, to preserve them from change, but Mr. Warrington has shown, by experiment, that this is an error. He kept bottles of Dill and Anise Waters with and without spirit for two years, and found that those without spirit kept well, whilst those with spirit had become acidified by the spirit changing into Acetic Acid.

ARAROBA.

See CHRYSAROBINUM.

Not Official.

ARECA.

The seed of the Areca Catechu, Linn., the betel-nut tree. Imported from the East Indies. A remedy for tape-worm. A paste is also made of the powder for a dentifrice.

60 grains of powdered Areca Nut made into a ball with Honey answers well as a vermifuge for a large dog.

This was Official in 1867 Brit. Pharm., but is omitted in 1885 edition.

Three Alkaloids have been obtained from Areca: Arecoline, an alkaline, colourless, volatile liquid, soluble in Water, Alcohol, Ether, and Chloroform, and forming a crystallizable Hydrobromide; Arecaine, neutral, soluble in Water and dilute Alcohol, but insoluble in Ether, Chloroform and Benzol; and another, in much smaller quantity.—*L.* '89, i. 496.

Not Official.

ARGENTUM.

SILVER.

Ag, eq. 108.

A white, malleable, ductile, and tenacious metal, bears a brilliant polish, and is soft when pure. Sp. g. 10·5; fuses at between 1800° and 1900° F. It was one of the earliest known metals, the Luna or Diana of the alchemists. It occurs native, sometimes arborescent, sometimes in masses; it is seldom, however, pure. The mines of Peru and Mexico are the richest. The mines of Saxony, Bohemia, Swabia, and Kongsberg in Norway, are the richest in Europe. It has been found in Cornwall and Devonshire as a sulphuret.

Metallic Silver can be distinguished from other metals resembling it (except Aluminium or Platinum) by not being affected by a solution (10 p.c.) of Nitrate of Silver. The other metals give a black stain.

Silver is readily acted on by Sulphuretted Hydrogen.

Soluble in Nitric Acid, and precipitated by Hydrochloric Acid.

ARGENTI NITRAS.

NITRATE OF SILVER. LUNAR CAUSTIC.

$AgNO_3$, eq. 170.

In colourless tabular right rhombic prisms, or in white cylindrical rods.

Solubility.—100 grains in 50 minims of Water, measuring 80 minims; 1 in 18 of Rectified Spirit.

Tests.—An aqueous solution gives, with Hydrochloric Acid, a curdy white precipitate, soluble in Ammonia. 10 grains dissolved in 2 fluid drachms of Distilled Water give, with Hydrochloric Acid, a curdy white precipitate (Chloride of Silver), which, when washed with hot Distilled Water and thoroughly dried, weighs 8·44 grains—indicating the proper amount of metal. The filtrate, when evaporated by a water bath, leaves no residue—indicating absence of impurities. Nitrate of Silver may be adulterated with Nitrate of Sodium or Potassium, and these, of course, will remain after the Chloride of Silver has been precipitated and removed.

(Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Norw., Port., Russ., Span., Swed., Swiss and U.S.)

Medicinal Properties.—Tonic, antispasmodic, and astringent. It is said to be useful in cholera and angina pectoris, as well as in chronic diseases of the stomach; also in some nervous diseases, as epilepsy and locomotor ataxy. It is employed in chronic dysentery as an **enema,** 60 grains dissolved in 60 ounces of water, and as a bougie in chronic gonorrhœa. A dark line on the edges of the gums, removable by a course of Acid Tartrate of Potassium, precedes the immovable discolouration of the skin produced by the long-continued internal administration of this Salt.

Externally as a local stimulant to indolent ulcers, fistula, &c., and aphthous affections of the mouth, and as a caustic to poisoned wounds. As a local application to prevent pitting in small-pox, and to relieve the itching in pruritus; it is also applied, under Cocaine, to ulcers of the cornea. 1 to 3 grains to the ounce is employed for **lotions** and **collyria.**

Chilblains are sometimes painted with a strong solution of Nitrate of Silver.

A weak solution (1 in 500) for obstinate forms of eczema in children.—*L.M.R.* '88, 525.

Strong Solution of Iodide of Potassium, or Cyanide of Potassium, has been suggested for the removal of the black stains on the skin produced by Nitrate of Silver.

Dose.—$\frac{1}{6}$ to $\frac{1}{3}$ gr. or more. Prescribed in pills with Kaolin ointment. When dissolved in Spirit of Nitrous Ether makes a better application to the skin than an aqueous solution. In making the latter, of course *distilled* Water should be used.

$\frac{1}{60}$ gr. three times a day is a nerve tonic.

Incompatibles.—The Alkalies and their Carbonates, the Chlorides, and all Acids (except Nitric and Acetic); Iodide of Potassium, Solutions of Arsenic, and astringent infusions.

Antidotes—Solution of Common Salt, dissolved in water, milk, or some demulcent drink, and given freely; Emetic; White of Egg.

Preparations.

ARGENTI ET POTASSII NITRAS. *Syn.* MITIGATED CAUSTIC.

Nitrate of Silver, 1; Nitrate of Potassium, 2: fuse and mix thoroughly together in a capsule of platinum or thin porcelain, and pour the melted mass into proper moulds. =(1 in 3).

Now included in the B. P.; was a Not Official in Companion 1867.

Tests.—30 grs. dissolved in $\frac{1}{2}$ oz. of Distilled Water gives with Hydrochloric Acid a precipitate which, when washed with hot Distilled Water and thoroughly dried, weighs 8·44 grs.

(Austr. and Ger., Argentum Nitricum c. Kalio Nitrico, 1 in 3; Dan. and Swed., Nitras Argenticus bis Mitigatus, 1 in 3; Norw. and Swed., Nitras Argenticus Mitigatus, 1 in 2; Fr., Crayons d'Azotate d'Argent Mitigé, containing $\frac{2}{10}$, $\frac{1}{2}$, $\frac{1}{3}$ and $\frac{1}{4}$ of Nitrate of Silver; Russ., Argentum Nitricum bis Mitigatum, 1 in 3, also Argentum Nitricum Mitigatum, 1 in 2; Swiss, Argentum Nitricum cum Kalio Nitrico, 1 in 3; U.S., Argenti Nitras Dilutus, 1 in 2; not in the others.)

TOUGHENED NITRATE OF SILVER, OR TOUGHENED CAUSTIC.

Add Nitrate of Potassium, 5, to Nitrate of Silver, 95, and fuse together.

Test.—10 grs. will yield with Hydrochloric Acid 8 grs. of precipitate, and the filtrate when evaporated will leave a white residue.

Not Official.

MILD CAUSTIC POINTS, made by fusing Nitrate of Potassium in various proportions with Nitrate of Silver, are used by oculists and others; thus—

No. 1 consists of 1 Nitrate of Silver and 2 of Nitrate of Potassium. (OFFICIAL.)
2 „ 1 „ 3 „
3 „ 1 „ 3½ „
4 „ 1 „ 4 „

ARGENTI IODIDUM NASCENT.—Freshly precipitated Iodide of Silver has been recommended in conjunctival catarrhs. *See* Warlomont's formula.—*L.M.R.* '86, 498.

ARGENTI OXIDUM.

OXIDE OF SILVER.

Ag_2O, eq. 232.

An olive-brown powder, insoluble in Water, but soluble in Nitric Acid.

Tests.—When heated to redness, 29 parts leave 27 of pure Silver. It is dissolved by Nitric Acid, and precipitated by Chloride of Sodium; the supernatant liquor ought not to be coloured blue by Ammonia, indicating absence of copper.

(Swiss and U.S.; not in the other Pharmacopœias.)

Medicinal Properties.—It has the general therapeutic qualities of the Nitrate, without its escharotic effect, and is said to be less liable to discolour the skin. A valuable astringent in hæmorrhages.

Dose.—½ to 2 grs. in form of pill, made with Kaolin Ointment.

If prescribed with Creasote or with the Chlorides in pills, the Oxide must be first diffused through some inert powder such as Kaolin, or the heat produced in rapidly reducing the Silver or Chlorine combining with it, causes the mass to become red-hot, or to explode.

Incompatibles.—Bromides, Chlorides, and Iodides.

ARGENTUM PURIFICATUM.

REFINED SILVER.

Test.—If Ammonia be added in excess to a solution of the metal in Nitric Acid, the resulting solution exhibits neither colour nor turbidity. Used only to prepare Nitrate of Silver.

(Belg., Dan., Dutch, Ger., and Russ., Argentum Foliatum; Fr., Argent Purifié; Span., Plata Pura; not in the others.)

ARMORACIÆ RADIX.

HORSERADISH ROOT.

The fresh root of the *Cochlearia armoracia*, (perennial), cultivated in Britain, and most active in the autumn and early spring before the leaves have appeared.

Its virtues are taken up by Water and Alcohol. When distilled with Alcohol, it yields none of the oil. The root may be kept fresh for some time if buried in sand and in a cool place.

(Belg.; Dan.; Fr., Raifort; Port., Rabao Rustico; Span., Rabano Rusticano; not in the others.)

Medicinal Properties.—It is highly stimulant, exciting the stomach, and promoting the secretions, especially that of urine. Used in atonic dyspepsia; also as a sudorific in chronic rheumatism. The infusion is used as a **gargle** for aphonia.

Preparation.

SPIRITUS ARMORACIÆ COMPOSITUS.

Horseradish Root scraped, 20; dried Orange Peel cut small and bruised, 20; Nutmeg bruised, ½; Proof Spirit, 160; Water, 60; mix, and distil over 160. =(1 in 8).

Sp. g. about 0·920.

The quantity of water has been increased from 40 to 60.

Dose.—1 to 3 drms.

(Not in the other Pharmacopœias; Belg., Dutch and Port., have a Spiritus; Belg., a compound Syrup; Port., a compound Wine; Fr., Teinture de Raifort Comp.; Span., Alcohol de Cochlearia Comp.; they all differ widely from the above.)

Not Official.

INFUSUM ARMORACIÆ COMPOSITUM.—Fresh Root, sliced, 1; Black Mustard Seed, 1; Compound Spirit of Horseradish, 1; boiling Distilled Water, 20: macerate two hours; strain, and add the spirit.

Dose.—1 to 2 oz. as a warm stimulant. Used also as a gargle for aphonia.

It is found in practice that a temperature of 150° to 180° F. makes the strongest infusion.

Aconite Root has been mistaken for this root, which seems incredible, unless we reflect that country people are in the habit of putting into the ground again Horseradish that has been scraped until only the crown and a remnant of the root vanishing to a point remain, resembling the tap-root of Aconite.

ARNICÆ RHIZOMA.

ARNICA RHIZOME.

The rhizome and rootlets of the *Arnica montana* (perennial), or Leopard's Bane, dried. Collected in the mountainous parts of Central and Southern Europe.

(Austr., Port., Russ., Swed., and U.S., root and flowers; Fr., Hung., and Span., root, leaves, and flowers; Belg., Dan., Dutch, Ger., Norw., and Swiss, flowers.)

Medicinal Properties.—Stimulant, acting on the brain and the whole nervous system; irritant to the stomach and bowels. The Tincture is used externally for bruises and wounds, diluted with Water; but Sir A. Garrod states that equally good results are produced by the application of Spirit and Water.

Preparation.

TINCTURA ARNICÆ.

Arnica Rhizome, in No. 40 powder, 1; Rectified Spirit to percolate 20; macerate forty-eight hours with 15 of the spirit, agitating occasionally; pack in a percolator, and when it ceases to drop, pour on the remaining 5 of spirit; afterwards subject the contents of the percolator to pressure, filter and add sufficient Rectified Spirit to make 20. =(1 in 20).

Dose.—½ to 1 drm.

(Belg., Fr., Span., and U.S. 1 and 5, Dan., Dutch, Ger., Norw., Port., Russ., Swed. and Swiss, 1 and 10, all from flowers; Port. and Russ., 1 and 5, U.S., 1 in 10, from the root; Austr., root 4, flowers 1, Alcohol (70 p. c.) 25; Hung., root 6, leaves 3, and flowers 1, diluto Alcohol (70 p.c.) 50: all are by weight.)

A popular remedy used externally for bruises, mixed with hot water, and applied with lint; but sometimes an erysipelatoid inflammation of the skin follows its use.

It has been suggested that this "inflammation" has been due to the larvæ of *Atherix maculatus* when the Tincture has been made from the flowers.—*L.M.R.* '80, 227.

Symptoms of poisoning by Arnica are violent vomiting, intense headache, diarrhœa, colic, depression of pulse.

Antidotes.—Opium, Morphine.

Not Official.

ARNICA OPODELDOC.—White Soap, 4; Rectified Spirit, 10; Tincture of Arnica, 5; Camphor, 1. Dissolve by heat, and strain.

EXTRACTUM ARNICÆ RADICIS FLUIDUM.—U.S. 1 in 1, made with diluted Alcohol.

Not Official.

ARSENIUM.

As, eq. 75.

A bluish-grey metal, of great brilliancy, quickly tarnishing on exposure. It has a sp. g. of 5·7 to 5·9, and volatilizes at 356° F. (180° C.), its fumes having the odour of garlic.

It is found in most countries, usually combined with other metals. Its oxide is also a natural production, though chiefly found in the flues of furnaces in which various metallic ores are roasted.

See ACIDUM ARSENIOSUM.

Not Official.

ARSENII BROMIDI LIQUOR.

LIQUOR POTASSII ARSENIATIS ET BROMIDI. CLEMENS' SOLUTION.

Arsenious Acid, 73 grs.; Bicarbonate of Potassium, 73 grs.; Bromine, 117 grs.; Water, sufficient to measure 16 ozs.: boil the Arsenious Acid and Bicarbonate of Potassium in 2 oz. of Water till dissolved; when cold add 10 oz. of Water, then the Bromine, and make up with Water to the given volume. Stir occasionally during a few hours, then filter.

This Liquor was originally described by Dr. Clemens as "a chemical union of Arsenious Acid and Bromine," but as the action of Bromine on Arsenious Acid results in the formation of Arsenic Acid and Hydrobromic Acid, the above formula has been adjusted (*U.S.N.F.*) to yield these products as Potassium Salts.

The Solution contains Arsenic equal to one per cent. of Arsenious Acid.

Recommended in the treatment of diabetes.—*L.M.R.* '83, 86.

ARSENII IODIDUM.

IODIDE OF ARSENIC.

AsI_3, eq. 456.

Obtained by direct combination of Iodine and Metallic Arsenium or by evaporating to dryness an aqueous mixture of Arsenious and Hydriodic Acids.

Small orange coloured crystals, which gradually lose Iodine when exposed to the air.

Solubility.—1 in 11 of Water; 1 in 42 of Rectified Spirit; 1 in 19 of Bisulphide of Carbon.

It is gradually decomposed by boiling Water and by boiling Alcohol.

Its aqueous solution has at first a neutral reaction, but immediately begins to decompose into Arsenious and Hydriodic Acids.

Test.—Heated in a test-tube it almost entirely volatilizes, violet vapours of Iodine being set free.

Dose.—$\frac{1}{30}$ of a grain in a pill.

(U.S.; not in the other Pharmacopœias.)

Medicinal Properties.—Has been used in obstinate cutaneous affections of syphilitic origin, but is generally given as Donovan's Solution.

Preparation.

LIQUOR ARSENII ET HYDRARGYRI IODIDI (Donovan's Solution).

Iodide of Arsenium, 45 grs.; Red Iodide of Mercury, 45 grs.; Distilled Water a sufficiency. Triturate the Iodides with about 1½ oz. Water until nearly all is dissolved; pass it through a filter, and wash the latter with sufficient Distilled Water to make with the former 10 fl. oz. =(1 grain in 110 minims).

A clear pale liquid with a metallic flavour and acid reaction, sp. g. 1·016.

This solution is rather stronger than the old Donovan's Solution, as it contains the equivalent of about 1 per cent. of each of the Iodides.

Dose.—10 to 30 minims, diluted with Water.

(U.S., 1 in 100; not in the other Pharmacopœias.)

Incompatibles.—Acids, the Salts of Morphia, and Corrosive Sublimate.

ASAFŒTIDA.

ASAFŒTIDA.

The gum-resin exuded from the incised living root of *Ferula narthex* and of *Ferula scorodosma,* and probably other species.

Procured in Afghanistan. Imported from Bombay.

It occurs usually in irregular masses, composed of tears agglutinated together by a darker coloured and softer material.

It should yield not more than 10 per cent. of ash. 50 to 60 per cent. should be soluble in Rectified Spirit.

(Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Norw., Port., Russ., Span., Swed., Swiss, and U.S.)

Medicinal Properties.—Stimulant, antispasmodic, expectorant, and laxative. Useful in cases of flatulency in the bowels, in hysteric paroxysms, and other kinds of nervous affections; also in some forms of chronic bronchitis.

Was recommended by the late Mr. Worms for the Cattle Plague.

Dose.—5 to 20 grs.

Contained in Pilula Aloes et Asafœtidæ.

Preparations.

ENEMA ASAFŒTIDÆ.

Asafœtida, 30 grs.; Distilled Water, 4 oz.; rub the Asafœtida with the Water added gradually so as to form an emulsion, for one enema.

(Not in the other Pharmacopœias.)

PILULA ALOES ET ASAFŒTIDÆ, 1 in 4. *See* ALOES.

PILULA ASAFŒTIDÆ COMPOSITA. *Syn.* PIL. GALBANI COMP.

Asafœtida, 2; Galbanum, 2; Myrrh, 2; Treacle by weight, 1; melt together in a water bath, and stir together until the mass assumes a uniform consistence. =(Asaf. and Galb., of each, 1 in 3½).

As this mass is unsatisfactory for dispensing the following method is recommended. Powder the Myrrh, mix it with the Asafœtida and Galbanum melted on a water-bath, allow the mixture to cool, and after chilling it by artificial means reduce it to powder with ⅙ of its weight of Light Carbonate of Magnesium. This powder will keep well and can be made into pills as required with the aid of Proof Spirit.

Dose.—5 to 10 grs.

(Port., similar to Brit.; U.S., Asafœtida 3, Soap 1; Swed., has Pilula Fœtida Succinata, but very different from Brit.; not in the other Pharmacopœias.)

SPIRITUS AMMONIÆ FŒTIDUS, 38 grs. in 1 oz. *See* AMMONIA.

TINCTURA ASAFŒTIDÆ.

Asafœtida (small fragments), 1; Rectified Spirit, a sufficiency; macerate seven days in 6 of the spirit in a closed vessel, with occasional agitation, filter, and add Rectified Spirit to make 8. =(1 in 8).

Dose.—½ to 2 drms.

(Belg., Dan., Dutch, Fr., Ger., Norw., Port., Russ., Span., Swed. and Swiss, 1 and 5; U.S., 1 in 5; all by weight; not in Austr. and Hung.)

Prescribed with Aromatic Spirit of Ammonia, or with Mucilage, as the resin separates when mixed with Water only; alone or with Tincture of Valerian and Hyoscyamus, in flatulent hysteria.

ATROPINA.

ATROPINE.

An alkaloid, in colourless acicular crystals, $C_{17}H_{23}NO_3$, eq. 289, obtained from Belladonna.

A solution 1 in 200 heated in a basin on a water-bath for two hours completely lost its alkaline reaction and ceased to precipitate with Mercuric Chloride; after eight hours the reaction was faintly acid.

Solubility.—1 in 500 of Water; 1 in 3 of Rectified Spirit; 1 in 25 of Ether; 1 in 1 of Chloroform; 1 in 52 of Glycerine; 1 in 15 of Oleic Acid.

Tests.—Its solution in water has an alkaline reaction, powerfully dilates the pupil, and gives a citron-yellow precipitate with Chloride of Gold. Leaves no ash when burnt with free access of air. It gives a red colouration to phenolphthalein paper and reduces Mercuric and Mercurous Chloride to their respective oxides.—*P.J.* xiv. 718; xvi. 601, 762.

(Belg., Dan., Dutch, Fr., Port., Russ., Span. and U.S.; not in the others.)

Medicinal Properties.—Used externally in applications, and by hypodermic injection, for the relief of pain, more particularly that arising from muscular spasm. It checks excessive secretion from the sweat and salivary glands. Has been given for the relief of whooping-cough. In the form of solution of the Sulphate of Atropine it is used for ophthalmic purposes.

Like Belladonna, it dilates the pupil of the eye. The Unguentum Atropinæ is a much cleaner preparation than Unguentum Belladonnæ.

It is used as an antidote in poisoning by Aconite, Gelsomine, Hydrocyanic Acid, Morphine, Muscarine, Nitro-Glycerine, Pilocarpine, and Physostigmine.

Has been recommended in hæmoptysis by **hypodermic injection** of $\frac{1}{300}$ to $\frac{1}{130}$ grain.—*B.M.J.* '87, i. 842.

A case of traumatic tetanus cured by hypodermic injection of Atropine (4-minim doses of B.P. Liquor).—*L.* '85, ii. 849.

Antidotes.—In case of poisoning by Atropine, the antidotes are the same as for Belladonna.

Preparation.

UNGUENTUM ATROPINÆ.

Atropine, 8 grs.; Rectified Spirit, ½ drm.; Benzoated Lard, 1 oz.: dissolve the Atropine in the Spirit, and mix with the Lard. =(about 1 in 60).

Benzoated Lard is now ordered in the place of Lard, which is a mistake; it makes the ointment much too irritating for the eyes; the ointment also is too strong for ophthalmic use, half the strength would be better.

(In no other Pharmacopœia.)

Not Official.

OLEATUM ATROPINÆ.—Atropine, 8 grs.; Oleic Acid, 1 oz.: dissolve with a heat not exceeding that of a water bath.

The same strength as Unguentum Atropinæ.

UNGUENTUM ATROPINÆ (*L.O.H.*).—Atropine, 4 grs.; Soft Paraffin, 1 oz.: heat till dissolved and stir till cold.

UNGUENTUM ATROPINÆ CUM COCAINA (*L.O.H.*).—Atropine (alkaloid) 4 grs.; Cocaine (alkaloid) 10 grs.; Soft Paraffin, 1 oz.: heat till the alkaloids are dissolved.

ATROPINÆ SALICYLAS.—Introduced as a substitute for the Sulphate, but its aqueous solution does not keep so well as that of the latter.

Not Official.

HOMATROPINA.

Atropine, under the action of Barium Hydrate, splits up into Tropic Acid and Tropine; the latter, combined with Amygdalic Acid and acted upon by diluted Hydrochloric Acid, forms Oxytoluyl-tropeine or Homatropine.

Colourless crystals, which are very deliquescent.

Solubility.—Nearly insoluble in Water, but soluble 1 in 80 of Olive Oil, 1 in 20 of Castor Oil.

HOMATROPINÆ HYDROBROMAS.

In colourless crystals, which are not hygroscopic.

Solubility.—1 in 10 of Water.

(Dutch; not in the others.)

Medicinal Properties.—Dilates the pupil more rapidly than Atropine, and its effects disappear sooner. When used with Cocaine the action is quicker and more powerful.

Preparations.

GUTTÆ HOMATROPINÆ (*L.O.H.*).—Hydrobromate of Homatropine, 4 grs.; Distilled Water, 1 oz.—*Lond. Hosp.*

LAMELLÆ HOMATROPINÆ.—Discs of Gelatine containing $\frac{1}{5000}$ grain of Homatropine.

OLEUM HOMATROPINÆ CUM COCAINÆ (*L.O.H.*)—Homatropine pure, 10 grs.; Cocaine (alkaloid) 10 grs.; Castor Oil, 1 oz.: heat together till dissolved.

ATROPINÆ SULPHAS.

SULPHATE OF ATROPINE.

It is crystalline or pulverulent, and nearly colourless.

Solubility.—10 in 4 of Water; 1 in 3 of Rectified Spirit. Insoluble in Ether and Chloroform.

Tests.—It leaves no residue when burned with free access of air.

Its solution in water dilates the pupil of the eye, should be neutral to test-paper, and gives a white precipitate with Chloride of Barium.

(Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Norw., Port., Russ., Span., Swed., Swiss and U.S.)

Medicinal Properties.—*See* Atropine and Belladonna.

Preparations.

LAMELLÆ ATROPINÆ. Discs of Atropine.

Discs of Gelatine, with some Glycerine, each weighing about $\frac{1}{50}$ grain and containing $\frac{1}{5000}$ grain Sulphate of Atropine.

Atropine Gelatine can be obtained as round discs in a bottle, or as squares in a sheet for the pocket-book.

Gelatine discs are also made containing $\frac{1}{250}$ grain Atropine to paralyse the accommodation, also Atropine $\frac{1}{5000}$ grain and Cocaine $\frac{1}{200}$ grain.

Gelatine discs for **hypodermic use** $\frac{1}{120}$ grain.

LIQUOR ATROPINÆ SULPHATIS.

Sulphate of Atropine, 9 grs.; Camphor Water, 16½ fl. drs.: dissolve. =(1 in 100).

1 grain in 110 minims. Half this strength is sufficient for ordinary purposes.

It is now made with Camphor Water, and is a little stronger.

Solutions of Sulphate of Atropine are more suitable for ophthalmic use than those of Atropine, as the latter requires spirit for its solution.

Dose.—1 to 4 minims = $\frac{1}{110}$ to $\frac{1}{28}$ grain of Sulphate of Atropine.

(Norw., 1 in 200; Port., 1 in 100; not in the other Pharmacopœias.)

Not Official.

GUTTÆ ATROPINÆ SULPHATIS (*L.O.H.*).—Sulphate of Atropine 2 grains; Distilled Water, 1 oz.

GUTTÆ ATROPINÆ SULPHATIS FORTIORES (*L.O.H.*).—Sulphate of Atropine, 4 grains; Distilled Water, 1 oz.

GUTTÆ ATROPINÆ SULPHATIS MITIORES (*L.O.H.*).—Sulphate of Atropine, 1 gr.; Distilled Water, 1 oz.

INJECTIO ATROPINÆ HYPODERMICA.—Sulphate of Atropine, 2 grs.; Water, 1 oz.

Dose.—2 to 4 minims = $\frac{1}{120}$ to $\frac{1}{60}$ grain of Sulphate of Atropine.

INJECTIO ATROPINÆ ET MORPHINÆ. *See* MORPHINÆ ACETAS.

AURANTII CORTEX.

BITTER-ORANGE PEEL.

The outer part of the rind of the ripe fruit of the *Citrus vulgaris*, dried.

(Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Norw., Port. (Laranjeira Azeda) Russ., Span. (Naranjo Agrio), Swed. and Swiss; U.S., Aurantii Amari Cortex, also Aurantii Dulcis Cortex.)

Medicinal Properties.—It is a mild tonic, carminative and stomachic; a useful addition to bitter Infusions and some Decoctions.

Preparations of Orange Peel should not be prescribed with Tincture of Perchloride of Iron, as the mixture would be blackened.

Used in the preparation of Infusum Gentianæ Compositum, Spiritus Armoraciæ Compositus, Tinctura Cinchonæ Composita, and Tinctura Gentianæ Composita.

Preparations.

INFUSUM AURANTII.

Dried Bitter Orange Peel, cut small, 1; boiling Water, 20: infuse for fifteen minutes and strain. =(1 in 20).

Dose—1 to 2 oz.

(Not in other Pharmacopœias. Fr., Tisane d'Oranger, Leaves 5, Boiling Water 1000.)

INFUSUM AURANTII COMPOSITUM.

Dried Bitter Orange Peel, cut small, ½ oz.; Fresh Lemon Peel, 112 grs.; Cloves, bruised, 56 grs.; boiling Water, 20 oz.: infuse for fifteen minutes and strain. =(1 in 40).

The Brit. Pharm. gives the relative proportions as 4, 2, 1, 160. These are incorrect. Now as the above quantities are not the same as Brit. Pharm., 1867, it would have been better in altering to have made the grains and parts agree.

The quantities of Lemon Peel and Cloves have been slightly decreased.

Dose.—1 to 2 oz.

(Not in the other Pharmacopœias.)

SYRUPUS AURANTII.

Tincture of Orange Peel, 1; Syrup, 7: mix. =(1 in 8).

Sp. g. about 1·282.

Dose.—1 to 2 drms

(Austr. and Hung., peel, weak spirit, sugar, and tincture; Belg., Dan., Port. and Swed., peel, water, and sugar; Dutch, peel, water, and sugar: Fr., peel, spirit, water, and sugar; also Citric Acid, water, and sugar, with Alcoolature d'Orange; Ger. and Russ., peel, wine, and sugar; Norw., tincture 1, syrup 9; Span., peel, water, and sugar; Swiss, peel, white wine, and sugar; U.S., sweet peel, spirit, water, and sugar.)

Used in the preparation of Confectio Sulphuris.

TINCTURA AURANTII.

Dried Bitter Orange Peel, cut small and bruised, 1; Proof Spirit, 10; macerate for seven days in a closed vessel with occasional agitation, then strain, press, and filter; add sufficient Proof Spirit to make 10. =(1 in 10).

Dose.—1 to 2 drms.

It is much prescribed with Mineral Acids, also with Quinine in tonic mixtures.

(Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Norw., Russ., Span., Swed., Swiss, and U.S., 1 and 5; all by weight; not in Port.)

Used in the preparation of Mistura Ferri Aromatica, Syrupus Aurantii and Tinctura Quininæ.

AURANTII FRUCTUS.

BITTER ORANGE.

The ripe fruit of the *Citrus vulgaris.*

(Belg., Fr., Port. and Span. The following use the unripe fruit: Dan., Ger., Norw., Russ. and Swed.)

Preparations.

TINCTURA AURANTII RECENTIS.

The thin yellow and fresh rind of Bitter Orange, 6; macerate for 7 days in 18 of Rectified Spirit, with frequent agitation; strain, press, and filter: finally, if necessary, add Rectified Spirit to make 20. = (3 in 10).

Dose—1 to 2 drms.

(Fr., Alcoolature d'Orange, fresh peel 1, alcohol 2; U.S., Tinct. Aurant. Dulc. fresh peel 1, alcohol 5; not in the other Pharmacopœias.)

VINUM AURANTII.

Wine made in Britain by the fermentation of a saccharine solution to which the fresh peel of the Bitter Orange has been added, containing 10 to 12 per cent. of Alcohol and but slightly acid to test-paper. It is, in fact, the Orange Wine sold in the shops of grocers and others.

Introduced to prepare Quinine Wine, also Vinum Ferri Citratis.

Not Official.

ELIXIR ADJUVANS (*U.S.N.F.*).—Sweet Orange Peel fresh, 3 ozs.: Wild Cherry Bark, 1 oz.; Liquorice Root decorticated and dried, 2 ozs.; Coriander, ¼ oz.; Caraway, ¼ oz.; all troy weight; percolate with a mixture of Rectified Spirit 1 and Water 2 to obtain 24 fl. ozs. and add Syrup 16 fl. ozs.

Not Official.

OLEUM AURANTII CORTICIS.

A volatile Oil, extracted by mechanical means from Fresh Orange Peel.

A pale yellowish liquid, with neutral reaction, having the odour of Orange Peel. Sp. g ·840—·860.

Solubility.—1 in 7 of Rectified Spirit; in all proportions of Absolute Alcohol.

By keeping, the Oil becomes thicker and acquires a disagreeable terebinthinate taste, which may be prevented by mixing it while fresh with 5 per cent. of Alcohol, and decanting the Oil after it has become clear from the sediment.—*U.S.P.*

(Austr., sp. g. ·860; Belg., sp. g. ·835—·844; Dutch, sp. g. ·850—·870; Fr.; Hung., sp. g. ·850—·860; Port., sp. g. ·835—·850; Russ., sp. g. ·830—·835; Span. and Swiss, sp. g. not given; U.S., sp. g. about ·860; not in Dan., Ger., Norw., or Swed.)

ELIXIR AURANTII (*U.S.*).—Sprinkle or spray 1 oz. of Oil of Orange over 2 ozs. of Cotton Wool; pack it tightly in a percolator and pass through it a mixture (Alcohol 1, Water 3), sp. g. ·971, till 200 ozs. of a clear percolate are obtained, in which dissolve without heat Sugar 100.

ELIXIR SIMPLEX (*B.P.C.*).—Oil of Bitter Orange, 30 mins.; Rectified Spirit, 6 oz.; dissolve and add Distilled Cinnamon Water, 7 oz.; Syrup, 7 oz. Mix. Filter through paper moistened with Proof Spirit and well sprinkled with Kaolin, returning the first portions of filtrate until it passes through bright.

Dose.—20 to 60 minims.

SPIRITUS AURANTII COMPOSITUS (*U.S.N.F.*).—Oil of Orange, 1 oz.; Oil of Lemon, ¼ oz.; Oil of Coriander, 40 mins.; Oil of Star-Anise, 10 mins.; Alcohol (sp. g. ·820) to make 5 ozs.

AURANTII FLORIS AQUA.

ORANGE-FLOWER WATER.

Syn.—Aqua Naphæ.

The distilled water of the flowers of the Bitter Orange tree, *Citrus vulgaris*, and of the Sweet Orange tree, *Citrus aurantium;* prepared mostly in France.

The Orange-flower Water of commerce is usually three times the strength of that employed in former years.

Test.—Not coloured by Sulphuretted Hydrogen—indicating absence of Copper and Lead.

(Austr., Belg., Dan., Dutch; Fr., Eau Distillée de Fleur d'Oranger; Ger., Hung.; Port., Agua de Flores de Laranjeira; Russ.; Span., Agua do Azahar; Swed., Swiss, and U.S.; not in Norw.)

Medicinal Properties.—Chiefly used as a flavouring vehicle, and in eye lotions.

Dose.—½ to 1 oz.

Preparation.

SYRUPUS AURANTII FLORIS.

Orange-flower Water, 8; Refined Sugar, 48; Distilled Water, 16, or a sufficiency; heat the sugar and water together, strain, and when nearly cold, add the orange-flower water. When finished, should weigh 72 oz. and measure 54 oz. Sp. g. 1·330.

Dose.—1 to 2 drms.

(Belg., O.F.W. 345, Sugar 655; Fr., Russ., and Span., O.F.W. 10, Sugar 18; Ger., O.F.W. 2, Water 2, Sugar 6; Port., O.F.W. 7, Sugar 13; Swiss, O.F.W. 6, Sugar 10; U.S., O.F.W. 35, Sugar 65: all by weight; not in the others.)

Not Official.

OLEUM AURANTII FLORUM.

Syn.—OLEUM NEROLI.

A volatile Oil, distilled from fresh Orange-flowers.

A yellowish or brownish thin liquid, with neutral reaction, having a powerful odour of Orange-flowers.

Solubility.—In all proportions of Rectified Spirit or Absolute Alcohol.

If a little Alcohol be poured on the surface of the Oil and the mixture gently undulated, a bright violet fluorescence will be observed.

(Austr., sp. g. ·890; Belg., sp. g. ·860—·870; Fr., Ger.; Port., sp. g. ·874—·878; Russ., sp. g. ·850—·950; Span., Swiss; U.S., sp. g. ·850—·890; not in Dan., Dutch, Hung., Norw., or Swed.)

Not Official.

AURI ET SODII CHLORIDUM, U.S.

A mixture composed of equal parts of dry Chloride of Gold and Chloride of Sodium, and which contains about 32 per cent. of pure Gold.

An orange yellow powder, slightly deliquescent, and with faint acid reaction. Entirely soluble in 2 parts of Water.

(Dutch, Ger., and Russ., 30 p. c. Gold; Swiss and U.S., 32·4 p. c. Gold; Belg., Fr., and Port., 49 p. c. Gold; not in the others.)

Fr., Port. and Span., have also Chloride of Gold containing about 65 per cent. of Pure Gold.

Commercial Chloride of Gold is not the pure Chloride $AuCl_3$, but the crystallized double salt $AuCl_3.NaCl_2H_2O$, containing 50 per cent. of metallic Gold.

Commercial Chloride of Gold and Sodium is the above crystallized salt mixed with an equal weight of Chloride of Sodium, and contains 25 per cent. of metallic Gold.

Medicinal Properties.—It has been given on the Continent for amenorrhœa and secondary syphilis, in the form of pills made with China Clay or Bolus Alba.

P.G. maximum single dose, ·05 gramme ($\frac{3}{4}$ grain); maximum daily dose, ·2 gramme (3 grains).

It is also used in photography. Its solutions should be protected from white light.

BALSAMUM CANADENSE.

See TEREBINTHINA CANADENSIS.

Not Official.

BALSAMUM DIPTEROCARPI.

GURJUN BALSAM, OR WOOD OIL.

(Pharmacopœia of India.)

A balsamic exudation, obtained from the trunk of *Dipterocarpus lævis* and other species by incision and the application of heat. Imported from the East Indies. It is an oleo-resin, constituting a transparent liquid of the consistence of Olive Oil, lighter than Water, of a dark brown sherry colour, slightly fluorescent. Heated in a vial to 270° F. (132·2° C.) it becomes turbid and gelatinous. It affords a turbid solution when shaken with an equal volume of Benzol.

Test.—When dissolved in about 20 parts of Carbon Bisulphide and a drop of a cooled mixture of equal parts of Sulphuric and Nitric Acids added it takes a splendid violet colour, which lasts several hours. This reaction is not prevented by the presence of Resin or by Copaiba Balsam. (Fluckiger.)

Medicinal Properties.—Useful for leprosy. Dr. Dougall used 1 part Gurjun Balsam with three parts of Lime Water to anoint the body night and morning, cleaning the body before the morning application, first with dry earth and then with water. He also gave 2 drachms of the Balsam internally night and morning, mixed with Lime Water.—*L.* '74, i. 694. Mr. J. D. Hillis, of the Leper Asylum in British Guiana, is greatly in favour of it.—*L.* '80, i. 659 ; *M.P.* '89, i. 664.

It is used in India as a substitute for Balsam of Copaiba in gonorrhœa ; also as a natural varnish.

BALSAMUM PERUVIANUM.

BALSAM OF PERU.

A Balsam obtained from *Myroxylon Pereiræ.* It exudes from the trunk of the tree after the bark has been beaten, scorched, and removed.

From San Salvador, in Central America.

A reddish-brown or nearly black liquid, translucent in thin films, having a characteristic odour and bitter taste.

Sp. g. between 1·137 and 1·150. This has got lower in recent years, and is ascribed to a modification which the Balsam undergoes in the process of purification.

Solubility.—1 in 1 of Rectified Spirit, but when more than 3 of the spirit is added to 1 of Balsam it becomes turbid ; in all proportions of Chloroform ; insoluble in Olive Oil.

Tests.—It should not diminish in volume when shaken with an equal bulk of water. 10 drops triturated with 6 grs. of Slaked Lime produces a permanently soft mixture ; and the mixture on being warmed until all volatile matter is given off and until charring commences gives no fatty odour.

For papers on Tests for the purity of Balsam of Peru, see *P.J.* xii. 45 : xiii. 321 : xv. 237.

Balsam of Peru contains Cinnamic and Benzoic Acids, both of which possess antiseptic properties.

(Austr. and Russ., sp. g. 1·14—1·16 ; Dutch, Belg., sp. g. 1·14—1·15 ; Dan., and Span., sp. g. 1·15—1·16; Fr. ; Ger. and Hung., sp. g. 1·137—1·145 : Norw. ; Port., sp. g. 1·15 ; Swed. and Swiss ; U.S., sp. g. 1·135—1·150.)

Medicinal Properties.—A warm and stimulating tonic and expectorant. Useful in chronic catarrh, asthma, and other pectoral complaints, and in rheumatism; also to restrain excessive discharges, as gleets, &c.

Externally for chronic indolent ulcers and for sore nipples.

Dose.—10 to 15 minims as an emulsion with mucilage or sugar and yolk of egg with water.

Not Official.

UNGUENTUM PERUVIANUM.—Balsam, 1; Lard, 7.

An excellent application for sore nipples or cracked lips.

UNG. PERUVIANUM RESINOSUM.—Balsam, 1; Resin Ointment, 1: mix. Applied upon cotton-wool for bedridden sores.

BALSAMUM TOLUTANUM.

BALSAM OF TOLU.

A Balsam obtained from *Myroxylon Toluifera.* It exudes from the trunk of the tree after incisions have been made in the bark.

From Tolu, New Granada.

A soft solid, which becomes harder by keeping, of a yellowish brown colour and aromatic balsamic odour. When pressed between two warmed pieces of glass and then examined with a lens it exhibits an abundance of crystals of Cinnamic Acid.

We found sp. g. of two samples to be 1·23 and 1·258.

The natural constituents of Tolu Balsam are the same as those of Peru Balsam, only they exist in smaller quantity and different proportions, Benzyl Cinnamate forming the majority in the first, Benzyl Benzoate in the second.—*Y.B.P.* '77, 101.

Solubility.—1 in 1 of Rectified Spirit; 1 in 3 of Benzol; 2 in 1 of Chloroform; 1 in 1 of Glacial Acetic Acid; insoluble in Benzin; nearly insoluble in Bisulphide of Carbon.

(Austr., Belg., Dan., Dutch, Fr., Norw., Port., Russ., Span., Swed., Swiss, and U.S.; not in Ger., or Hung.)

Medicinal Properties.—Similar to those of the Balsam of Peru. Lozenges good for cough.

Dose.—10 to 20 grs., in the form of emulsion, with mucilage and sugar.

Contained in Pilula Phosphori and Tinctura Benzoini Composita.

Preparations.

SYRUPUS TOLUTANUS.

Balsam of Tolu, $1\frac{1}{4}$; Sugar, 32; Water, 20; boil the balsam with the water in a lightly covered vessel half an hour, stirring occasionally, and adding water when required; when cold, make up to 16; filter, add the sugar, and dissolve with the aid of a steam or water bath. When finished, weighs 48 and measures 36. Sp. g. 1·330.

=(1 in $28\frac{4}{5}$).

A better flavoured Syrup may be made as follows: Balsam of Tolu, $1\frac{1}{4}$; Sugar, 8; powder the Tolu with the Sugar, macerate in Water 16 for 24 hours, with frequent agitation, filter bright and dissolve in it (cold) Sugar 24.

Dose.—1 to 2 drms., in cough mixtures.

(Belg., Fr., Port., Russ., Span., Swiss, and U.S.; Dan., made with Tincture; not in the other Pharmacopœias.)

TINCTURA TOLUTANA.

Balsam of Tolu, 1; Rectified Spirit, 6: place them in a well-corked bottle, which should then be laid on its side and revolved slowly from time to time until the Balsam is dissolved, filter, and add sufficient Rectified Spirit to make 8. =(1 in 8).

Dose.—15 to 60 minims, mixed with mucilage or syrup.

(U.S., 1 in 10; Dan., Fr., Span. and Swed. 1 and 5; Port., 3 in 20: all by weight; not in the other Pharmacopœias.)

Contained in the Trochisci Acidi Tannici, Morphinæ, Morphinæ et Ipecacuanhæ, and Opii.

BEBERINÆ SULPHAS.

SULPHATE OF BEBERINE.

Prepared from *Nectandra* or *Bebeeru* bark, which grows in British Guiana.

According to Fluekiger this is an impure Sulphate of Buxine, yielding about one-third of its weight of pure alkaloid.

In dark-brown thin translucent scales, yellow when in powder, with a strong bitter taste.

Solubility.—1 in 80 of water; sparingly in Spirit.

It will also dissolve 1 in 1 of water, and the solution can be diluted up to 1 and 8 of water, but on further dilution it precipitates.

Tests.—When burnt with free access of air leaves no residue. Its aqueous solution gives with Caustic Soda a yellowish white precipitate, readily soluble in excess; it is also dissolved by agitating the mixture with Ether. The ethereal solution, separated by a pipette and evaporated, leaves a yellow translucent residue entirely soluble in dilute Acids.

(Port.; not in the other Pharmacopœias.)

Medicinal Properties.—Tonic and antiperiodic, an imperfect substitute for Quinine; given in neuralgia, also in menorrhagia.

Dose.—1 to 3 grs. as a tonic; 5 to 10 grs. as an antiperiodic, given in solution, or in pills made with Glycerine.

Incompatibles.—Alkalies and their Carbonates, Bromide and Iodide of Potassium, Lime Water, Tartaric Acid, and Tartrates, Astringent Infusions and Tinctures.

BELÆ FRUCTUS.

BAEL FRUIT.

The half-ripe fruit, dried, of *Ægle marmelos*, a tree which grows in most parts of India.

In fragments, with a brownish-orange dried pulp adhering to the rind.

(Port., Bilva; not in the other Pharmacopœias.)

Medicinal Properties.—Has been much extolled for diarrhœa and dysentery, and is given in combination with Syrup of Red Gum or other astringents.

Sir Joseph Fayrer advises the use of fresh Bael fruits in the form of Bael Sherbet, as used in India.—*M.T.* '77, ii. 669.

For this purpose some fresh Bael fruits were obtained from India, and were made into confection by the author; it had the aroma and the flavour of the fresh fruits. The spring is the best time for importing the fruits. Dose of the **confection.**—A teaspoonful.

Preparation.

EXTRACTUM BELÆ LIQUIDUM.

Bael, 1 lb.; Distilled Water, 15 lbs.; Rectified Spirit, 3 oz.: macerate for twelve hours in 5 lbs. of the water, pour off the liquid, repeat the operation twice for one hour. Press, filter through flannel, evaporate to 13 fl. oz., and when cold add the spirit.

A fluid ounce is equal to an ounce of Bael.

Note.—There was a mistake in the original text of Brit. Pharm. which has since been corrected. The spirit has been increased from 2 oz. to 3 oz.

Dose.—1 to 2 drms.

(Not in the other Pharmacopœias.)

BELLADONNÆ FOLIA.

BELLADONNA LEAVES (DEADLY NIGHTSHADE).

The fresh leaves and the branches to which they are attached; also the leaves separated from the branches, carefully dried, of *Atropa belladonna* (perennial); gathered in June, when the fruit has begun to form, from wild or cultivated plants growing in Britain.

(Austr., Belg., Dan., Norw., Russ., Span., Swed., Swiss and U.S., leaves; Dutch, leaves and fresh herb; Fr., leaves and fruit; Ger., leaves and branches; Port., herb; not in Hung.)

Medicinal Properties.—Anodyne in nervous and inflammatory affections. It is specially useful in checking the secretions of milk, sweat, and saliva. Given for the relief of some nervous disorders, as epilepsy, whooping-cough, and asthma. In large or continued doses it causes dilatation of the pupil and dryness of the mouth and throat. Dr. Nunnely successfully treated habitual constipation by giving $\frac{1}{6}$ to $\frac{1}{2}$ grain of Extract on rising in the morning, which rarely failed to produce a healthy stool after breakfast; and, by continuing its use for a week or fortnight, it restored the natural action of the bowels. For nocturnal incontinence of urine, dose 5 to 10 minims of the Tincture, with the same dose of Tinct. of Perchloride of Iron three times a day. (*L.* '70, Oct. 22; also *B.M.J.* '86, i. 291; *L.* '89, ii. 1056.) Ringer recommends larger doses of Belladonna for this troublesome complaint in children, 10 to 30 minims of the Tincture three times a day; small doses often fail when large doses at once succeed. Useful in loss of tone and irritable state of the generative organs which gives rise to nocturnal emissions, although it has slightly aphrodisiacal properties.

It is prescribed as the **Extract** in pills, and the **Tincture** for internal use; externally, the **Liniment** and **Compound Liniment** sprinkled on piline; the **Chloroform** mixed with Oils for rubbing; and the **Glycerinum** as a paint.

Incompatibles.—Caustic Alkalies, Opium, Strychnine.

Antidotes.—In cases of poisoning by Belladonna, the antidotes are, an emetic 10 grs. of Sulphate of Copper, 20 grains of Sulphate of Zinc, 1 oz. of Ipecacuanha Wine or hypodermic injection of $\frac{1}{10}$th grain Apomorphia. Chloral Hydrat. *L.* '81, i. 74, and ii. 589. Pilocarpine, *B.M.J.* '81, i. 594. Physostigma, *B.M.J.* '81, i. 918.

Preparations.

EXTRACTUM BELLADONNÆ.

Take 112 lbs. of fresh leaves and young branches, bruise in a stone mortar, or suitable apparatus, and press out the juice, heat it gradually to 130° F. (54·4° C.), separate the green colouring matter by a calico filter, heat the strained liquor to 200° F. (93·3° C.) to coagulate the albumen, and again filter; evaporate the filtrate by a water-bath to the consistence of a thin syrup, then add to it the green colouring matter previously separated and passed through a hair sieve, and, stirring the whole together assiduously, continue the evaporation at a temperature not exceeding 140° F. (60° C.), until the extract is of a suitable consistence for forming pills.

100 lbs. of herb yield 56 lbs. of juice = nearly 4 lbs. extract (viz. 63 oz.).

100 lbs. leaves, when dried, weigh 16 lbs.

An estimation of the alkaloids contained in four samples of Extract of Belladonna, prepared in 1885 by different makers gave ·94 p. c., 1·17 p.c., 1·11 p. c., ·73 p. c. The following samples in good condition were examined at the same time: 1880—1·26 p. c., 1·22 p. c.; 1881—1·16 p. c., 1·21 p. c.; 1884—1·21 p. c.

Dose.—¼ to ½ gr., gradually increased to 1 or 2 grs. 1 gr. given in a pill for rheumatism.

(Austr., alcoholic from the **leaves**; Belg., clarified juice from **leaves** evaporated; Dan., made from **leaves** with weak spirit; Dutch, alcoholic from **fresh herb**; Fr., clarified juice from **leaves** evaporated, also alcoholic from the **seeds**; Ger., made with water and spirit from **leaves** and flowering branches; Hung., alcoholic from **root**; Norw., alcoholic from **leaves**; Port., aqueous from **dried leaves**, alcoholic from **fresh herb** and alcoholic extract purified by alcohol; Russ., made from **leaves** with water and spirit; Span., clarified juice from **leaves** evaporated, and aqueous from **dried leaves**; also alcoholic from **dried leaves**; Swed. and Swiss, alcoholic from **leaves**; U.S., an alcoholic extract from the powder of the **leaf**, also Abstractum Belladonnæ and a liquid extract of the **root**.)

SUCCUS BELLADONNÆ.

Freshly expressed juice from the fresh leaves and young branches, 3; Rectified Spirit, 1; mix; after 7 days filter. To be kept in a cool place.

Dose.—5 to 15 mins.

TINCTURA BELLADONNÆ.

The dried leaves in No. 20 powder, 1; Proof Spirit, 20: macerate forty-eight hours in 15 of the spirit, agitating occasionally; pack in a percolator, and when it ceases to drop, add the remaining spirit, let it drain, press the marc; filter and make up with proof spirit to 20.

=(1 in 20).

60 minims may be considered about equal in therapeutical strength to 1 gr. of the extract.

Dose.—From 5 to 20 minims.

(Dried leaves,—Austr., 1 in 10; Belg., Fr., Port., Span. and Swiss, 1 and 5; U.S., 15 in 100; Russ., 1 and 10; Fresh leaves,—Belg., Fr., and Port., 1 and 1: all by weight; not in the others.)

Not Official.

GLYCERINUM BELLADONNÆ.—Extract of Belladonna, ½ oz.; Water, 60 mins.; Glycerine to 1 oz.

This is practically the strength used in *University*, *London*, and *Middlesex Hospitals*.

(Belg., Fr. and Port., 1 Extract in 10.)

Used as a pigment for relieving pain and tension in acutely inflamed parts; also painted on the breasts to suppress secretion of milk.

SUPPOSITORIUM BELLADONNÆ.—Extract of Belladonna, 1 grain; Cacao Butter, 15 grains, for one suppository.

The green Extract of Belladonna should be reduced with water to the consistency of a thick syrup, then rubbed with some of the melted Cacao Butter, and the mixture then added to the remainder of the melted Cacao. In this way from one to five grains of the Extract can readily be made into a suppository.

BELLADONNÆ RADIX.

BELLADONNA ROOT.

The dried root of *Atropa belladonna*, from plants growing wild or cultivated in Britain; or imported in a dry state from Germany. The roots are best collected in early spring.

(Austr., Belg., Dan., Fr., Hung., Port., Russ., Span., Swed., Swiss, and U.S.; not in Dutch, Ger., or Norw.)

Four samples of good dried root were examined and gave ·432, ·430, ·390, ·501, p. c. alkaloid, chiefly Atropine.

From a parcel of roughly collected roots which were dried, the crowns, containing also portions of stem, were separated; also the larger roots (say over an inch in diameter) were separated from the smaller roots (average $\frac{1}{2}$ inch in diameter). These three divisions were separately ground and passed through a No. 60 sieve. On examination for alkaloids the crowns gave ·41 p. c., large roots ·56 p. c., small roots ·50 p. c.

Preparations.

EMPLASTRUM BELLADONNÆ.

Alcoholic Extract of Belladonna, 1; Resin Plaster, 2; Soap Plaster, 2: melt the plasters by the aid of a water-bath, then add the Extract, and mix the whole thoroughly together. = (1 in 5)

There is a great alteration in appearance from the Brit. Pharm. 1867 Plaster; it was formerly made of the extract from the leaves. Applied to the breasts after nursing, to check secretion of milk.

(Belg., Extract 1 in 8; Fr., Alcoholic Extract (Seeds) 3 in 4; Port., Alcoholic Extract 1, Lead Plaster 9; Russ., Powdered Leaves 1 in 3·6; Span., Extract about 1 in 5; Swiss, Powdered Leaves 1 in 3; U.S. (Alcoholic Extr. of) Root 1, Resin Plaster 1; not in the others.)

EXTRACTUM BELLADONNÆ ALCOHOLICUM.

Belladonna Root in No. 20 powder, 1 lb.: macerate it with 2 pints of Rectified Spirit in a closed vessel for forty-eight hours, transfer to a percolator, and when the fluid ceases to pass continue the percolation with water until 2 pints of fluid have been collected. Evaporate the percolated liquid by a water-bath until it has acquired a suitable consistence.

NOTE.—By this method the last portions of spirit are mixed with water, which increases the yield of Extract but lowers its alkaloidal value.

Commercial specimens examined (*P.J.* xvi., 777) varied in yield of alkaloid from 1·6 to 4·45 per cent.

Dose.—$\frac{1}{16}$ to $\frac{1}{4}$ grain.

Used in the preparation of Emplastrum and Unguentum Belladonnæ.

(Foreign Pharmacopœias compared under Extractum.)

LINIMENTUM BELLADONNÆ.

Belladonna Root in No. 40 powder, 20; Camphor, 1; Rectified Spirit, a sufficiency: moisten the root for three days with 20 of the spirit, then pack in a percolator, and when the liquor ceases to pass continue the percolation with sufficient spirit to produce, with the Camphor, 30. (3 of Liniment are equal to 2 of Root.)

28 lbs. of Belladonna Root, in powder, was macerated and percolated as by Brit. Pharm. 1864 formula, *i.e.* until 418 fluid ounces were collected: the receiver was then removed and the percolation continued as by 1885 formula, *i.e.* until a further 224 fluid ounces were collected. The two products were then examined separately for alkaloids, and gave ·452 per cent. in the first percolate, ·092 per cent. in the second percolate.

These results show that the Liniment 1 in $1\frac{1}{2}$ is weaker than that of 1 in 1 (introduced by Peter Squire), and would not therefore be improved by further dilution, as has been recommended by some writers.

A recent experiment with a root rich in alkaloid, percolated as above, gave ·564 p. c. in the first two-thirds, and only ·031 in the remaining third.

Three commercial samples lately examined by us yielded ·176, ·21, ·22 p. c. of crystalline alkaloid. See also *P.J.* xvii. 257.

Prescribed with equal parts of Soap Liniment or Compound Camphor Liniment. An excellent topical application for neuralgic pain. Does not mix readily with fixed oils. When an oily liniment is required, it is better to order the Chloroform of Belladonna mixed with Olive or Almond Oil.

(U.S., about 1 in 1; Span., Aceite de Belladonna, Fresh Leaves 1, Olive Oil 2; not in the others.)

UNGUENTUM BELLADONNÆ.

Alcoholic Extract of Belladonna, 50 grs.; Benzoated Lard, 1 oz: mix. =(about 1 in 10).

This ointment was formerly made with Extract of Belladonna and Lard, and is still preferred by some practitioners.

(Belg., Extract 1 in 10; Fr. (Pommade) Extract 4 in 30; Port. (Pomada) aqueous Extract 1, Lard 9; (Forte) Alcoholic Extract 1, Lard 9; Russ., Extract 1 in 11; Span. (Pomada) Extract 1, Lard 5; Swiss (Tincture of) Leaves 1, Lard 4; U.S., Alcoholic Extract 1 in 10; not in the others.)

ATROPINA. *See* ATROPINA.

Not Official.

CHLOROFORMUM BELLADONNÆ.—Powdered root, 20: percolate with sufficient Chloroform to produce 20.

Applied with equal parts of camphor liniment or olive oil, for painful rheumatism.

LINIMENTUM BELLADONNÆ COMP.—Liniment of Belladonna, 7; Chloroform of Belladonna, 1: mix. Sprinkled on impermeable piline (not *spongio piline*), when applied to the loins in lumbago, should be firmly pressed with the hands on the part for five minutes to insure perfect contact, and should then be kept on at least 10 or 12 hours.

The author, who suffered much from lumbago, found this more effectual and much more convenient than Belladonna plasters.

BENZOINUM.

BENZOIN.

The Balsamic resin exuded from incisions made in the bark of the *Styrax benzoin*, a native of Sumatra, Java, Borneo, Laos, and Siam, and probably from one or more other species of *Styrax*.

There are several qualities of Benzoin in the market; two, however, are chiefly used in medicine, one agglutinated tears, the other a compact mass consisting of a rich brown resin with more or less of tears in it. Imported from Siam and Sumatra, that from Siam being the purer and having the stronger odour. Yields by sublimation 15 to 20 per cent. of Benzoic Acid.

Solubility.—The tears wholly soluble 1 in 5 of Rectified Spirit; 1 in 1 of Ether; and in Solution of Potash. The mass contains impurities, which are left after treating it with Alcohol. The Solution in Spirit or Ether is acid.

(Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Norw., Port., Russ., Span. (Benjui), Swed., Swiss and U.S.)

Medicinal Properties.—Stimulant, expectorant, styptic, used in making aromatic pastilles.

The Compound Tincture is given internally for chronic cough, and applied externally to indolent ulcers, cuts, or wounds.

Dose.—10 to 30 grs., rarely given in powder.

Used in the preparation of Acidum Benzoicum, Adeps Benzoatus, and Unguentum Cetacei.

Preparation.

TINCTURA BENZOINI COMPOSITA. Friar's Balsam. Traumatic Balsam.

Benzoin, 8; prepared Storax, 6; Balsam of Tolu, 2; Socotrine Aloes, $1\frac{1}{2}$ (less $\frac{1}{40}$th);* Rectified Spirit, 68: macerate seven days, with occasional agitation, filter, and add sufficient Rectified Spirit to make 80. =(1 in 10).

Dose.—$\frac{1}{2}$ to 1 drm., triturated with mucilage or yolk of egg.

(Belg., Dan., Norw., Port., Swed., Swiss and U.S.; Fr., Teinture Balsamique; (they vary considerably in composition and strength); not in the others.)

Not Official.

TINCTURA BENZOINI.—Benzoin, 1; Rectified Spirit, 10: dissolve and strain. This has been added to the B.P.C. formulary.

(Austr., Belg., Dan., Dutch, Fr., Ger., Norw., Port., Russ., Span., Swed. and Swiss, 1 and 5; U.S., 1 in 5; all by weight.)

LOTIO BENZOINI.—A nice lotion to protect the face from the heat of the sun is made with Tincture of Benzoin, 1; Rose Water, 40.

UNGUENTUM BENZOINI.—Benzoin 1; Adeps 4.

Useful application for ulcers of the leg.—*L.* '87, ii. 351.

VAPOR BENZOINI (*T.H.*).—Compound Tincture of Benzoin, 60 minims in a pint of Water at 140° for each inhalation.

A sedative for acute inflammation of the pharynx and larynx.

Compound Tincture of Benzoin has also been found useful for influenza and catarrh by inhaling the vapour of the tincture through the nose.—*B.M.J.* '85. i. 430, 682.

INSUFFLATIO BENZOINI (Vigier).—Tincture of Benzoin, 1; Boracic Acid, 1 Starch Powder, 1. Mix and let the Alcohol evaporate. Used as a snuff in coryza. —*T.G.* '88, 141.

Not Official.

BERBERIS.

Bark of the root of *Berberis vulgaris.*

The fluid Extract and the Salts of Berberine have been used with success in intermittent fevers.—*T.G.* '86, 489.

Berberine also occurs in Hydrastis Canadensis and Calumba.

Preparations.

EXTRACTUM BERBERIDIS FLUIDUM.—Made with Proof Spirit. 1 Extract = 1 Bark.

Dose.—20 to 60 minims.

BERBERINÆ PHOSPHAS.—This is the most soluble Salt of Berberine. 1 in 15 of Water; 1 in 9 of hot Water, but part separates out on standing.

Dose.—1 to 5 grains.

Not Official.

BETULÆ ALBÆ OLEUM.

A bituminous liquid obtained by destructive distillation of the wood of *Betula alba.* Russia leather derives its odour from this oil.

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* To be exact, 16 grains are to be taken from every $1\frac{1}{2}$ oz. of Aloes.

Preparation.

UNGUENTUM OLEI BETULÆ, (*B.S.H.*)—Birch Tar, 5 fluid drachms; Yellow Wax, 120 grains: melt the Wax, add the Oil, and stir till cold.

Used in psoriasis and dry eczema.

Caution.—The use of this Ointment in eczema demands care.

BISMUTHUM.

BISMUTH.

Bi, eq. 209.

In its crude state is generally impure.

BISMUTHUM PURIFICATUM.

The Pharmacopœia gives a process for the purification of Bismuth by fusion with Cyanide of Potassium and Sulphur, and subsequently with the dried Carbonates of Potassium and Sodium.

A crystalline metal of a greyish-white colour, with a distinct roseate tinge.

Sp. g. 9·83; fuses at 507° F. (264° C.)

Tests.—Dissolved in a mixture of equal volumes of Nitric Acid and Distilled Water, it forms a solution which, by evaporation, yields colourless crystals that are decomposed on the addition of water, giving a white precipitate. If the mother-liquor from which the crystals have been separated be evaporated with Hydrochloric Acid until all the Nitric Acid is dissipated, a little of the product yields no evidence of Arsenium on being examined by the Hydrogen test, commonly known as Marsh's Test; no blue colouration on adding Water and excess of Ammonia (Copper), and no precipitate on filtering and saturating the ammoniacal filtrate with Nitric Acid (Silver); no white precipitate with Diluted Sulphuric Acid (Lead); no red or black precipitate with Sulphite of Sodium (Tellurium and Selenium); and no blue precipitate with Ferrocyanide of Potassium (Iron).

Employed for the preparations of Bismuth.

A delicate test for Bismuth in solution is the black precipitate produced on boiling with solution of Stannous Chloride in Caustic Potash.

(Belg., Dutch, Fr., Port., Span., Swed. and Swiss; not in the others.)

BISMUTHI CARBONAS.

CARBONATE OF BISMUTH.

$(Bi_2O_2CO_3)_2, H_2O$, eq. 1038.

A white powder, prepared by dissolving Purified Bismuth in Nitric Acid, and precipitating with Carbonate of Ammonium.

Soluble with effervescence in Nitric Acid; insoluble in Water.

Tests.—If to Nitric Acid, mixed with half its volume of Distilled Water, as much Carbonate of Bismuth be added as the Acid will dissolve, one volume of this solution poured into 20 volumes of water will yield a white precipitate; when added to Sulphuric Acid, coloured with Sulphate of Indigo, the colour of the latter is not discharged, unless a relatively very minute proportion of the Indigo solution be used (indicating absence of Nitrates); the Nitric Acid Solution gives no precipitate or becomes only slightly turbid with Solution of Nitrate of Silver (indicating absence of Chlorides). It should also stand the tests described under "Purified Bismuth."

(Port., Swiss and U.S.; not in the other Pharmacopœias.)

Medicinal Properties.—Similar to the Subnitrate, and often preferred to it.

Dose.—5 to 20 grs.

The following prescription is a good one for pyrosis:—

Bismuthi Carbonatis, 2 drms.; Magnes. Carb. levis, 1 drm.; Pulv. Tragac. Comp. 2 drms; Aq. Flor. Aurant., Glycerin, āā 2 drms.; Aquæ ad 6 oz.

Dose.—3 to 4 teaspoonfuls 3 times a day after meals.

Mucilage of Acacia is not a good vehicle for Bismuth; it settles as a hard mass in the bottle, which is difficult to diffuse.

BISMUTHI CITRAS.

CITRATE OF BISMUTH.

$BiC_6H_5O_7$, eq. 398.

A white powder, usually containing 2½ per cent. of absorbed moisture.

Solubility.—Insoluble in Water; readily in Solution of Ammonia.

Tests.—Its solution in Ammonia gives with Sulphuretted Hydrogen a black precipitate (Sulphide of Bismuth), and the filtrate from this, after it has been boiled until free of Ammonia, and then filtered, gives a white precipitate (Citrate of Calcium) when warmed with Lime Water; the filtrate also affords no black colour round a crystal of Sulphate of Iron added together with an equal bulk of Sulphuric Acid (Nitrate). On strongly heating Citrate of Bismuth it chars, and on ignition yields a residue for the most part black[*] but with a yellow surface; soluble in a little Nitric Acid. The latter solution on being dropped into Water affords a white precipitate[†]; and the solution should also stand the tests described under "Purified Bismuth." 10 grs. dissolved in solution of Ammonia and treated with Sulphuretted Hydrogen in excess yields a precipitate which, when well washed and dried, weighs about 7 grs.

(U.S.; not in the other Pharmacopœias.)

Medicinal Properties.—Similar to the Subnitrate.

Dose.—2 to 5 grs.

Preparations.

LIQUOR BISMUTHI ET AMMONII CITRATIS.

Rub Citrate of Bismuth, 800 grs., to a paste with a little Distilled Water; add solution of Ammonia gradually and with stirring until the Salt is just dissolved; dilute with Distilled Water to measure 20 oz.

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[*] The colour on ignition, approaches more nearly to a yellowish green.

[†] This reaction is rendered more delicate by first adding a slight excess of Ammonia to the Nitric Acid Solution, and redissolving the precipitate in a small quantity of Hydrochloric Acid. This, on being poured into Water, gives a white precipitate, which is insoluble in Tartaric Acid, and is thus distinguished from an Antimony precipitate.

A colourless solution, neutral or alkaline to test-paper, which is miscible with Water.

If the solution does not contain an excess of Ammonia, it will deposit. We find that after solution is effected, an additional ½ oz. of Liquor Ammoniæ to 80 ozs. will keep it bright.

Tests.—Sp. g. 1·07. Two fluid drachms mixed with an ounce of Distilled Water and treated with Sulphuretted Hydrogen in excess yields a black precipitate which, when washed and dried, weighs about 7 grs. Evaporated to dryness and the residue ignited, a charred mass with a yellow edge results; this treated with Nitric Acid affords a solution which should stand the tests described under "Purified Bismuth."

One fluid drachm contains an amount of Bismuth equivalent to about 3 grs. of Oxide of Bismuth.

Dose.—30 to 60 minims.

BISMUTHI ET AMMONII CITRAS.

Evaporate the solution of Citrate of Bismuth and Ammonium over a water-bath to the consistence of a syrup; spread the resulting fluid in thin layers on glass or porcelain plates and dry at a temperature not exceeding 100° F. (37·8° C.). Remove the scales and preserve them in a stoppered bottle. Small shining translucent scales, which yield Ammonia when warmed with solution of a fixed alkali.

Solubility.—1 in 1 of Water; sparingly in Rectified Spirit.

Tests.—10 grs. dissolved in Water and treated with Sulphuretted Hydrogen in excess yields a precipitate which, when washed and dried, weighs about 6½ grs. On ignition it should stand the tests given under "Citrate of Bismuth."

These scales, when convenient, can be used for making the Liquor (1 in 10). Dissolve 1 oz. of the scales in 8 oz. of Distilled Water with a few drops of Solution of Ammonia to clear it, and make up with Distilled Water to 10 oz.

Dose.—2 to 5 grs.

(U.S.; not in the other Pharmacopœias.)

Not Official.

BISMUTHI NITRAS.

In colourless transparent crystals. Decomposed by water, giving a white precipitate of Subnitrate. Soluble in Glycerine, but is slowly deposited from the solution when water is added. 10 grs. dissolved *cold* in an ounce of Glycerine have been used in skin diseases.—*M.T.* '76, ii. 646.

It forms with Sulphuric Acid, diluted with an equal bulk of water, a solution which is blackened by Sulphate of Iron, showing the presence of a Nitrate.

Not Official.

BISMUTHI OLEAS.

Crystallized Nitrate of Bismuth, 280 grs.; dissolve cold in Glycerine 4 ozs. by weight; add slowly Solution of Oleate of Sodium, 20 ozs.; warm gently, wash by decantation, collect, and dry.

It forms a pearly grey soft bland substance.

Medicinal Properties.—It is a reliable application in pustular eruptions and hyperæmia of the skin.—*B.M.J.* '84 ii. 751.

BISMUTHI OXIDUM.

OXIDE OF BISMUTH.

Bi_2O_3, eq. 466.

A dull lemon-yellow powder.

Solubility.—Insoluble in Water; soluble in Nitric Acid mixed with half its volume of Water.

Tests.—The Nitric Acid solution gives no precipitate or becomes only slightly turbid with solution of Nitrate of Silver—indicating absence or only a trace of chlorides; it stands the tests for impurities described under "Purified Bismuth." Heated to incipient redness it is not diminished in weight (absence of moisture and Carbonic Acid).

Dose.—5 to 15 grains.

(Not in the other Pharmacopœias).

Not Official.

BISMUTHI OXIDUM HYDRATUM.

A white amorphous powder, soluble in an excess of Hydrochloric Acid and precipitated again on the addition of Water as Oxychloride. It mixes readily with Water to form a cream.

CREMOR BISMUTHI.—Hydrated Oxide of Bismuth, 1; Water, 4: rub together till smooth.

BISMUTHI SUBNITRAS.

SUBNITRATE OF BISMUTH.

Syn. Oxynitrate of Bismuth, White Bismuth, Magistery of Bismuth.

$BiONO_3$, H_2O, eq. 305.

Note.—David Howard writes, if the compound $BiONO_3$, H_2O exists, it is so unstable that it could certainly not be kept without decomposition.

A heavy white powder in minute crystalline scales.

Solubility.—Insoluble in water. Soluble without effervescence in Nitric Acid mixed with half a volume of Distilled Water.

Tests.—It forms with Sulphuric Acid diluted with an equal bulk of Water a solution which is blackened by Sulphate of Iron (Nitrate). The Nitric Acid solution gives only a faint opalescence with a very small proportion of Hydrochloric Acid (Silver), with solution of Nitrate of Silver remains clear or becomes only slightly turbid (absence or trace of Chlorides), and stands the tests for impurities described under "Purified Bismuth." If 10 grs. be dissolved in Nitric Acid, and the fluid be mixed with a solution of about 20 grs. of Citric Acid and sufficient Ammonia to give decided alkalinity, the mixture then being boiled while still kept faintly alkaline, no precipitate or opalescence is observable (Calcium Phosphate).

(Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Norw., Port., Russ., Span., Swed., Swiss and U.S.)

Medicinal Properties.—It is highly useful in pyrosis, some forms of vomiting and irritative dyspepsia; also in diarrhœa; like Iron it blackens the excretions. It is recommended to be injected in gonorrhœa, 60 grains to the ounce of Water; the Bismuth is mixed with an equal quantity of Glycerine or suspended with Tragacanth:

writers differ as to whether it is better in the acute or chronic stage. When prescribed in a mixture, it should be suspended with Compound Powder of Tragacanth, 2 or 3 drachms in a 6-oz. mixture: the addition of Glycerine assists the Tragacanth.

As Subnitrate of Bismuth in Water slowly parts with its Nitric Acid, the mixture is always Acid, and this somewhat interferes with its suspension, and when prescribed with Bicarbonate of Sodium it causes a slight but steady evolution of Carbonic Acid; these objections do not apply to the Carbonate of Bismuth, which is therefore preferred in mixtures.

Externally it is used as a cosmetic, but is more or less blackened by an impure atmosphere; and in lotion for some chronic skin diseases.

Has been recommended as a dressing for wounds (*L.* '85, ii. 634, and *T.G.* '85, 266). A case of poisoning from the above use of it (*B.M.J.* '87, i. 749).

Dose.—5 to 20 grs. in pill at meals.

Incompatibles.—Effervescence ensues if prescribed in Water with Alkaline Bicarbonates.

Preparation.

TROCHISCI BISMUTHI.

Lozenges prepared with Subnitrate of Bismuth, Carbonate of Magnesium, precipitated Carbonate of Calcium, Sugar, Gum Acacia, and Rose Water.

Each lozenge contains 2 grains of Subnitrate of Bismuth.

Dose.—1 to 6 lozenges.

A modification of this lozenge has been recommended by Sir W. Roberts, omitting the Bismuth and adding Chloride of Sodium.—*B.M.J.* '89, ii. 374.

It is known as the Gastric Antacid Lozenge.

(Fr. and Port. 1½ gr. in each; not in the other Pharmacopœias.)

Not Official.

LOTIO BISMUTHI (*B.S.H.*).—Subnitrate of Bismuth, 10 grs.; Water, 1 oz.: mix. Used as a sedative lotion in cases of eczema.

UNGUENTUM BISMUTHI.—Subnitrate of Bismuth, 60 grs.; Lard, 1 oz.

FERRIER'S SNUFF.—Hydrochlorate of Morphine, 2 grs.; Acacia powder, 2 drms.; Subnitrate of Bismuth, 6 drms.—*L.* '76, i. 525.

It is described as a speedy and efficacious remedy for a recent cold in the head; each time the nostrils are cleared another pinch should be taken, using it frequently at first. One quarter to one half of this formula may be used in the twenty-four hours.

Glass insufflators are made to blow it up the nostrils.

BISMUTHI SUBIODIDUM.—A brick-red amorphous powder, insoluble in Water. Has been recommended as a substitute for Iodoform in the treatment of chancres and foul ulcers.—*T.G.* '87, 612; *Y.B.P.* '87, 286.

Not Official.

BISMUTHI SALICYLAS.

A basic salt containing 63 per cent. of Bismuthous Oxide.

Tests.—The true salt does not yield more than a trace of Salicylic Acid when treated with Chloroform.

Medicinal Properties.—Has been given with success in gastro-enteric affections, particularly those of children.—*L.* '86, ii. 31, 1229; *T.G.* '86, 775; *L.* '88, i. 191, 1100.

Dose.—5 to 20 grains, prescribed in Water, with Glycerine or Syrup.

Not Official.

BOLDO.

The leaves and young twigs of the *Peumus fragrans*, a native of Chili. The activity is due to a glucoside, Boldine, and a volatile oil (sp. g. ·918).

(Fr. and Span.; not in the other Pharmacopœias.)

Medicinal Properties.—Has been used in liver complaints, and as a stimulant to digestion, also as a hypnotic.

Boldine has been given as a hypnotic in capsules containing 3 grains.

TINCTURA BOLDO.—Leaves, 1; Proof Spirit, 10.

Digest seven days and filter.

Dose.—10 to 40 mins.

(Fr., 1 and 5; not in the other Pharmacopœias.)

BORAX.

BORAX.

Syn. SODÆ BIBORAS; PYROBORATE OF SODIUM.

$Na_2B_4O_7 . 10H_2O$, eq. 382.

A salt imported in a crude state from India; large quantities are also manufactured from the native Boric Acid of Tuscany, and the native Borate of Calcium of Peru.

In transparent colourless crystals, sometimes slightly effloresced.

Solubility.—1 in 22 of Water; 2 in 1 of boiling Water; 2 ounces of Borax are dissolved by 2 ounces of Glycerine, and the solution measures only 3¼ ounces. By the aid of 1 of Glycerine, 1 part of Borax will dissolve in 12 of Water. Insoluble in Rectified Spirit. Mucilage when mixed with Borax solidifies.

Tests.—191 grains dissolved in 10 fluid ounces of distilled water require for saturation 1000 grain-measures of the volumetric solution of Oxalic Acid. Borax is an alkaline salt, and this quantity of Oxalic Acid is required to render it neutral. A hot saturated solution, when acidulated with any of the Mineral Acids, lets fall as it cools a scaly crystalline deposit (Boric Acid), a solution of which in spirit burns with a green flame.

(Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Norw., Port., Russ., Span., Swed., Swiss and U.S.)

Medicinal Properties.—Antiseptic and mildly astringent. A local sedative to inflamed mucous membrane. As a **lotion** 10 grains to the ounce; as a **gargle** (saturated solution) about 20 grains to the ounce. The Glycerine of Borax is used as a **paint** for the throat.

Dose.—5 to 30 grains.

Incompatibles.—Mineral Acids and most of their salts. Mucilage of Acacia.

Preparations.

GLYCERINUM BORACIS.

Borax in powder, 1; Glycerine, 4; Distilled Water, 2; rub together and heat in a water-bath until the Borax is dissolved.

(By weight 1 in 8, measure 1 in 6¾).

It is more dilute than formerly, the Water being an addition. The 1867 preparation, made without Water, is more viscid, and on that account is preferred as an application by some physicians.

This is not merely a solution of Borax in Glycerine; the Glycerine splits up the Biborate into free Boric Acid and a more basic borate with secondary reactions. It reddens Litmus paper, and effervesces on the addition of Bicarbonate of Sodium.

Dose.—½ to 1½ drms.

20 mins. given in diarrhœa of infants.—*L.* '89, ii. 739.

(Dutch, 1 and 5 (by weight); not in the other Pharmacopœias.)

MEL BORACIS.

Finely powdered Borax, 2; Glycerine (by weight), 1; Clarified Honey, 16: mix. =(about 1 in 7).

Glycerine has been introduced into this as was proposed in Companion.

(Norw. and Swed. (Linctus), 1 in 10; Swiss, 1 in 10; the ingredients vary slightly. Not in the other Pharmacopœias.)

Applied to aphthæ of the mouth.

Not Official.

LOTIO BORACIS.—Borax, 1; Rose Water, 24; or 1 Borax, 1 Glycerine, 16 Rose Water.

Used as a cosmetic.

TINCTURA MYRRHÆ ET BORACIS.—Myrrh, 1; Eau de Cologne, 16; Borax, 1; Water, 3; Syrup, 3.

For the teeth and gums.

UNGUENTUM BORACIS.—Borax, 1; Simple Ointment, 8.

For chilblains or cracked nipples.

BROMUM.

BROMINE.

Br, eq. 80.

A liquid non-metallic element, obtained from sea-water and from some saline springs.

A dark brownish-red, very volatile liquid, which gives off red suffocating vapours at the ordinary temperature of the air. Sp. g. 2·97 to 3·14; boils at 135° to 145° F. (57·2° to 62·8° C.).

Solubility.—In Water, 1 in 30 by weight. Readily soluble in Glycerine, Alcohol, Ether, Chloroform, and Bisulphide of Carbon with gradual decomposition of the solvents.

Test.—Agitated with solution of Soda in such proportion that the fluid remains very slightly alkaline it forms a colourless liquid which, if coloured by the further addition of a small quantity of the Bromine, does not become blue on the subsequent addition of a cold solution of Starch (absence of Iodine).

(Belg., Dan., Fr., Ger., Port., Russ., Span., Swiss and U.S.; not in Austr., Dutch, Hung., Norw., or Swed.)

Medicinal Properties.—Deodoriser and disinfectant. Chiefly used in the form of the Bromides and Dilute Hydrobromic Acid.

Used to prepare Acidum Hydrobromicum Dilutum, Potassii Bromidum, and Sodii Bromidum.

ACIDUM HYDROBROMICUM DILUTUM, *see* p. 18.

Not Official.

HYPOBROMITE SOLUTION FOR UREA-ESTIMATION.—Prepare a stock Solution of Soda by dissolving 3½ ozs. of pure Hydrate of Sodium in 9 ozs. of Water. To one ounce of this add 42 mins. of Bromine when the solution is wanted for use.

LIQUOR BROMI.—Bromine, 160 mins.; Bromide of Potassium, 240 grs.; Water, 4 ozs.: dissolve the Bromide of Potassium in the Water in a bottle, add the Bromine and shake till dissolved.

Not Official.

BRYONIA.

The root of *Bryonia alba* and of *Bryonia dioica*.

(Belg., Fr., Port., Span. and U.S.; not in the other Pharmacopœias.)

Medicinal Properties.—In large doses it is an active hydragogue cathartic, in small doses it is given in pleurisy. It has also been used as a styptic in menorrhagia.—*L.* '88, ii. 438.

It has been used for many years by the homœopaths in the form of tincture.

The active principle is a glucoside.

Preparation.

TINCTURA BRYONIÆ, (*B.P.C.*)—Prepared from *fresh* Bryony root of such a strength that it shall represent a tincture containing 1 of dried root in 10 of Proof Spirit.

Fresh Bryony Root yields 32 to 40 per cent. of dried root.

Dose.—1 to 10 mins.

(U.S., 1 dried root in 10; Fr., Alcoolature, 1 fresh root in 1; not in the others.)

Antidotes.—Emetic; stimulants, Brandy or Spirit of Sal Volatile.

BUCHU FOLIA.

BUCHU LEAVES.

Syn.—Bucco; Diosma.

The dried leaves of *Barosma betulina*, *B. crenulata*, *B. serratifolia*, imported from the Cape of Good Hope.

Water and Alcohol extract their virtues, which probably depend on volatile oil and extractive.

(Belg. (Diosma), Dan., Dutch, Fr., Norw., Port., Span., Swed. and U.S.; not in Austr., Ger., Hung., Russ., or Swiss.)

Medicinal Properties.—Tonic, stomachic, diuretic, and diaphoretic. Given chiefly in complaints of the urinary organs, as irritation of the bladder and urethra, diseases of the prostate, and retention or incontinence of urine. Also in dyspepsia, chronic rheumatism, cutaneous affections, and dropsy.

Dose.—20 to 40 grs. in powder.

Preparations.

INFUSUM BUCHU.

Buchu leaves bruised, 1; boiling Distilled Water, 20: infuse for half an hour and strain. =(1 in 20).

Dose.—1 to 4 oz.

(Not in the other Pharmacopœias.)

TINCTURA BUCHU.

Buchu leaves in No. 20 powder, 1; Proof Spirit, 8: macerate for forty-eight hours with ¾ of the spirit, with occasional agitation, pack in a percolator, and let it drain, then pour on the rest of the spirit; when it ceases to drop, press the marc, filter, and make up with Proof Spirit to 8. =(1 in 8).

Dose.—1 to 4 drms.

(Fr., 1 and 5; not in the other Pharmacopœias.)

BUTYL-CHLORAL HYDRAS.

HYDRATE OF BUTYL-CHLORAL.

Syn. Croton-Chloral Hydrate, wrongly so called.

$C_4H_5Cl_3O, H_2O$. eq. 193·5.

Butyl-Chloral, produced by the action of dry Chlorine Gas on

Aldehyd cooled to 14° F. (—10° C.); separated by fractional distillation, and converted into the solid Hydrous Butyl-Chloral by the addition of Water.

White crystalline scales, which should have a slightly pungent but not an acid odour.

Some samples are acid, very pungent and acrid. Of these we found that 1 gramme heated in a porcelain capsule over a water-bath for 10 minutes wholly volatilised; but after having been washed with about twice its weight of water, pressed, and dried by exposure to air, the sample lost its pungency and acridity, and when heated as above lost less than half its weight.

The slow volatility of a sample may therefore be taken as a test of its purity.

An acrid sample by washing and drying had its melting point raised from 165° to 174° F.

Solubility.—1 in 44 of Water; 1 in 1 of Glycerine (very slowly); 5 in 3 of Rectified Spirit; 1 in 20 of Olive Oil; nearly insoluble in Chloroform.

Tests.—Fuses about 172° F. (77·8° C.) to a transparent liquid, which on cooling commences to solidify at about 160° F. (71.1° C.). It does not yield Chloroform when heated with solutions of Potash or Soda or with Milk of Lime. The aqueous solution is neutral or but slightly acid to Litmus paper.

(Not in the other Pharmacopœias.)

Medicinal Properties.—Is an efficient remedy in pure neuralgia of the face and head, but is useless when the pain arises from decayed teeth. It relieves dyspnœa of spasmodic asthma and irritative cough of phthisis or of chronic laryngitis.

Dose.—3 to 15 grains.

Antidote.—Picrotoxin $\frac{1}{20}$ grain.

Not Official.

MISTURA CROTON-CHLORAL.—Butyl-Chloral Hydrate, 4 grs.; Glycerine, 15 mins.; Chloroform Water, ½ oz.; Water to 1 oz.—*London Hospital.*

PILULA CROTON-CHLORAL.—Butyl-Chloral Hydrate, 4 grs.; Compound Powder of Tragacanth, 1 gr.; Water q. s.; in one pill.—*London Hospital.*

SYRUPUS BUTYL-CHLORAL (*B.P.C.*)—Butyl-Chloral Hydrate, 320 grs.; Syrup sufficient to make 20 ozs.; dissolve in the Syrup warm.

Dose.—1 to 4 fluid drachms.

Not Official.

BYNE. MALT.

Preparation.

EXTRACTUM BYNES. *Syn.* EXTRACTUM MALTI. MALT EXTRACT.

Is made by infusing or mashing ground Malt in water at a temperature under 160° F., preferably 140° F., filtering and evaporating the solution in vacuo to the consistence of a thick syrup. It is a more convenient preparation for use when it is evaporated only to a thin syrup, but the Extract is more liable to undergo fermentation under these circumstances.

In addition to the nutrient value which Malt Extract possesses, as representing a cooked and "digested" farinaceous food, it has also been valued for its diastasic activity, or power of converting further quantities of starchy material into Dextrin and Maltose. So far as artificial digestion, or conversion previous to the act of feeding, is concerned, it *has* this value; but as the action of Malt-diastase is greatly retarded by a very slight acidity, it is very open to question whether its action can continue in the presence of normal gastric juice, and more especially in the presence of pepsin.

It is, however, very useful when mixed with baked wheaten flour to form foods for infants and invalids when a certain amount of pre-digestion is required.

Good Malted Barley is tolerably uniform in diastase, and the widely differing results published from time to time by different analysts as to the strength of commercial Extracts must arise partly from a destruction of diastase in the manufacture of the Extracts, and partly from an ambiguity attaching to the phrase "conversion of Starch." Hence we find it stated on the one hand that one part of Starch requires for conversion 19 of Malt Extract, and on the other hand that one of Malt Extract will convert 30 parts of Starch.

When Starch is boiled with water it forms a semi-gelatinous fluid, which under the influence of Diastase quickly loses this condition and becomes thin and transparent, yet continues to give a blue colour with Iodine. As the action proceeds this "soluble starch" is converted into Erythro-dextrin, giving a red colour with Iodine, and finally into Acroodextrin and Maltose, neither of which is coloured by Iodine. These changes are gradual and merge one into the other, but from an analytical point of view they may be said to be complete when no shade of *red* appears on the addition of a few drops of dilute Iodine Solution, as this is the best defined point in the series of changes.

We have lately had occasion to examine a number of high-class barley-Malts, both from British and foreign grain. At a temperature of 99—100° F. the finest sample, when treated with its own weight of Starch ceased to give any red colour at the end of three minutes, and the poorest sample in fifteen minutes. A well-prepared Extract should be but little if at all inferior in diastasic power to the Malt from which it is made.

The latest contribution to the literature of the subject (*P.J.* xx. 481), publishes the fact that potato or arrowroot Starch ought always to be used in quantitative experiments of this kind, in preference to wheat and other Starches. With a knowledge of this fact, *potato* Starch was specified in our last edition.

The U.S. P. orders the Malt to be macerated in cold Water for six hours, then digested for an hour at 131° F., strained and evaporated at a temperature not exceeding 131° F. to the consistence of Honey. This contains active Diastase.

German Pharmacopœia gave a process for Extractum Malti in 1872, in which the infusion was *boiled* before evaporation. Of course, in this case, the whole of the Diastase is destroyed, and the process was omitted in P.G. 1882.

Medicinal Properties.—Malt Extract is prescribed in wasting diseases, and where the digestion is weak. It is also used to emulsify or dissolve Cod Liver Oil.

Dose.—A teaspoonful to a tablespoonful.

Not Official.

CADMII IODIDUM.

In white, flat, micaceous crystals.

Solubility.—1 in 1½ of Water; 1 in 2 of Rectified Spirit; 1 in 2 of Glycerine.

(Was Official in Brit. Pharm., 1867, but now omitted; not in the others.)

UNGUENTUM CADMII IODIDI.—Iodide of Cadmium, 1; Simple Ointment, 7: mix.

Medicinal Properties.—Used as a substitute for Ointment of Iodide of Lead. It does not stain like the latter.

(Not in any of the foreign Pharmacopœias.)

Not Official.

CADMII SULPHAS.

Colourless prismatic crystals.

Solubility.—4 in 5 of Water; insoluble in Rectified Spirit.

Test.—Solutions of Cadmium are distinguished by giving a yellow precipitate with Sulphuretted Hydrogen, insoluble in Hydrochloric Acid or Alkaline Sulphides.

(Belg., Fr., Port. and Russ.; not in the others.)

Medicinal Properties.—An astringent, similar to Sulphate of Zinc.

CAFFEINA.

CAFFEINE.

Syn. THEINA; GUARANINA; COFFEINUM.

$C_8H_{10}N_4O_2$, H_2O, eq. 212.

An alkaloid, usually obtained from the dried leaves of *Camellia thea*, or the dried seeds of *Coffea Arabica*, by evaporating aqueous infusions from which astringent and colouring matters have been removed.

It has also been obtained from Guarana and Paraguay tea.

It crystallizes from its aqueous solution, with one molecule of water, in fine white silky needles, which have a slightly bitter taste.

Solubility.—1 in 68 of Water; 1 in 40 of Rectified Spirit; 1 in 7 of Chloroform; 1 in 400 of Ether; 1 in 1 of Boiling Water.

Tests.—Its aqueous solution is neutral to Litmus. Treated with a crystal of Chlorate of Potassium and a few drops of Hydrochloric Acid, and the mixture evaporated to dryness in a porcelain dish, a reddish residue results, which becomes purple when moistened with Ammonia.

(Austr., Belg., Dutch, Fr., Ger., Hung., Port., Russ., Span., Swed., Swiss and U.S.; not in Dan., or Norw.)

Medicinal Properties.—A valuable heart tonic and diuretic. Given in 2 or 3 gr. doses three or four times a day (a French physician gave as much as 2 grammes in the course of one day). Its action differs from Digitalis in that it is much more rapid and entirely free from cumulative action. It should not be taken towards night for fear of causing sleeplessness.—*L.* '85, i. 188, 235, 322.

Given in 1 gr. doses every hour for sick headache.

Mr. Leeds, a dental surgeon in New York, has used a solution of 1 scruple of Caffeine in 2 oz. of a mixture of Alcohol and water (dissolved by a gentle heat), with better results when operating upon very sensitive teeth, than even with Cocaine.

Dose.—1 to 5 grains in solution or in pill, or more as required.

Preparation.

CAFFEINÆ CITRAS.

Dissolve Citric Acid 1, in Distilled Water 2, and stir Caffeine 1, into the heated solution; evaporate to dryness on a water bath, constantly stirring towards the end of the operation. Reduce to fine powder.

A white inodorous powder with an acid reaction on Litmus.

Lloyd stated (New Remedies '81, 38) that he was unable to obtain from aqueous or alcoholic solutions a Citrate of Caffeine from which the alkaloid could not be dissolved by Chloroform; but we find that, on boiling the product of the B.P. process with Chloroform, scarcely anything is extracted. The Citric Acid and Caffeine may therefore be assumed to be in chemical combination; but as, on the addition of Water, the Salt is decomposed with liberation of free Caffeine, the solubility of which is scarcely affected by the Citric Acid, the advantage of the combination is not obvious.

Solubility.—1 in 32 of Water; 1 in 22 of Rectified Spirit; 1 in 10 of a mixture of 2 parts Chloroform and 1 part Rectified Spirit.

The low figure (1 in 10 of Water) given in the B.P. and in the "Companion" 1886, probably arose from the readiness with which Caffeine Citrate forms supersaturated solutions. The salt readily dissolves in 12 parts of Water at 95° F., and if the solution be heated to 120° F. and then set aside, no crystallization will take place, even when cooled below 60° F.; but if the liquid be then stirred it will become solid almost immediately.

Dose.—2 to 10 grs.

(Hung. and Span.; not in the other Pharmacopœias.)

Not Official.

GRANULAR EFFERVESCING CITRATE OF CAFFEINE, containing 1 grain in each drachm.

CAFFEINÆ HYDROBROMAS.—In colourless silky needles.

Solubility.—1 in 52 of Water.

Dose.—1 to 4 grains.

GRANULAR EFFERVESCING HYDROBROMATE OF CAFFEINE, containing 1 grain in each drachm.

CAFFEINÆ SODIO-SALICYLAS.—An amorphous white powder, which is a mixture of Caffeine and Salicylate of Sodium.

Solubility.—1 in 1 of Water; 1 in 28 of Rectified Spirit.
From this salt Chloroform dissolves Caffeine but no Salicylic Acid, and Ether dissolves Salicylic Acid with only traces of Caffeine.

(Dutch, Salicylas Natricus cum Coffeino; Hung.; not in the others.)

Medicinal Properties.—The same as Caffeine, but being much more soluble is more easily administered; it is also suitable for hypodermic injection. Has been used in sea-sickness.—*B.M.J.* '87, ii. 768.

CAFFEINÆ TRI-IODIDUM.—In prismatic crystals, steel-blue by reflected and red by transmitted light.
On the addition of Water it is slowly decomposed with liberation of Iodine.

Test.—Does not colour Chloroform when shaken with it, until the addition of Water.

Dose.—1 to 3 grains in a pill for gout.

CAJUPUTI OLEUM.

OIL OF CAJUPUT.

The Oil distilled from the leaves of *Melaleuca minor*.

Imported from Batavia and Singapore.

Very mobile, transparent, of a fine pale bluish-green colour. It has a strong agreeable odour, and a warm, aromatic taste, and leaves a sensation of coldness in the mouth.

Solubility.—In all proportions of Rectified Spirit.

Sp. g. about ·926; very little variation in the several samples examined.

Dropped on water, it speedily evaporates. It burns rapidly, without leaving any residue. Copper has been found in it.

On shaking 5 c. c. of the Oil with 5 c. c. of Water containing a drop of diluted Hydrochloric Acid, the Oil loses its green tint and becomes nearly colourless.—*U.S.*

(Belg. (Essentia), Dan., Dutch (also depuratum), Fr., Ger., Norw., Port., Russ., Span. (Esencia de Cayeput), Swed., Swiss, and U.S.; not in Austr. or Hung.)

Medicinal Properties.—A powerful topical and general stimulant, antispasmodic, and diaphoretic. Efficacious in dropsy, chronic rheumatism, hysteria, flatulent colic, and other spasmodic and nervous affections, and in low states of the system. Externally, diluted with Olive Oil (1 to 2), used to allay chronic rheumatism and gout pains. Applied with lint for toothache.

Dose.—1 to 3 minims on a lump of Sugar, or in any bland fluid.
Contained in Linimentum Crotonis.

Preparation.

SPIRITUS CAJUPUTI.

Oil of Cajuput, 1; Rectified Spirit, 49; dissolve. =(1 in 50).

Dose.—50 to 100 minims.

(Not in the other Pharmacopœias.)

CALAMINA PRÆPARATA.

Syn. Lapis Calaminaris Præparata.

Native Carbonate of Zinc, calcined in a covered earthenware crucible at a moderate temperature, powdered and freed from gritty particles by elutriation.

A pale pinkish-brown powder, without grittiness.

Almost entirely soluble in acids, with effervescence.

Some samples contain Carbonate of Lead and others Sulphate of Barium.

(Port. and Russ.; not in the other Pharmacopœias.)

Medicinal Properties.—Mildly astringent, used in face lotions and dusting powders.

Preparation.

UNGUENTUM CALAMINÆ.

Prepared Calamine, 1; Benzoated Lard, 5: mix. =(1 in 6).

This was Official in London, Edinburgh, and earlier Dublin Pharmacopœias; formerly called Turner's Cerate.

Not Official.

LOTIO ZINCI OXIDI.—Oxide of Zinc, 60 grs.; Prepared Calamine, 60 grs.; Glycerine, 1 fl. drm; Water, 1 oz.—*B.S.H.*

A mild astringent in chronic eczema and acne rosacea.

Not Official.

CALCIUM.

CALCIUM.

Ca, eq. 40.

Calcium, a brilliant white combustible metal, was discovered by Sir Humphrey Davy in 1808. Sp. g. 1·5. It is the metallic base of Lime.

CALCII CARBONAS. *See* CRETA PRÆPARATA.

CALCII CARBONAS PRÆCIPITATA.

PRECIPITATED CARBONATE OF CALCIUM.

Syn. Precipitated Carbonate of Lime.

$CaCO_3$, eq. 100.

A white crystalline powder. Insoluble in water.

Chloride of Calcium, 5; Carbonate of Sodium, 13: dissolve each in 40 of boiling Distilled Water, mix; wash the precipitate with boiling Distilled Water thoroughly, and dry at 212° F. (100° C.).

Test.—With Diluted Nitric Acid it effervesces and gives a clear solution, which, if rendered neutral by evaporation to dryness and re-solution in Water, is not precipitated by Saccharated Solution of Lime added in excess, or by the solution of Nitrate of Silver—indicating the absence of Phosphates and Chlorides.

(Austr., Belg., Dutch, Fr., Ger., Hung., Port, Russ., Swed., Swiss and U.S.; not in Dan., Norw., or Span.)

Medicinal Properties.—Antacid and astringent.

Dose.—10 to 60 grs., in powder or mixture.
Used in the preparation of Trochisci Bismuthi.

CALCII CHLORIDUM.

CHLORIDE OF CALCIUM.

$CaCl_2$, eq. 111.

It may be formed by neutralizing Hydrochloric Acid with Carbonate of Calcium, adding a little solution of Chlorinated Lime and Slaked Lime to the solution, filtering, and evaporating till it becomes solid, and finally drying the salt at about 400° F. (204·4° C.).

When dried at 400° F. the salt is completely dehydrated, therefore the $2H_2O$ occurring in the B.P. formula is not correct.

In white agglutinated masses, dry, but very deliquescent.

Solubility.—1 in 1 of Water; 1 in 3 of Rectified Spirit.

Tests.—Evolves no Chlorine or Hypochlorous Acid on the addition of Hydrochloric Acid (absence of Hypochlorite). The aqueous solution is not precipitated by the addition of Lime Water.

Most samples are alkaline.

Dose.—3 to 10 grs.

(U.S.; Hung. and Swiss, Calcium Chloratum Fusum; Belg., Chloruretum Calcii; Port., Chloreto de Calcio; Fr., Chlorure de Calcium; Russ., Calcium Chloratum Siccum.; Span., Cloruro Calcico; not in the others.)

Used in the preparation of Æther, Æther Purus, and Chloroformum.

Preparation.

LIQUOR CALCII CHLORIDI.

Chloride of Calcium, 1; Distilled Water, 5. Dissolve and filter if necessary. =(about 1 in 5⅓.)

Sp. gr. 1·145.

This sp. g. is that given by a completely dehydrated Chloride, and as commercial Chloride of Calcium so frequently contains absorbed moisture the Liquor is better worked by the sp. g. or made from the fused Salt.

(Not in the foreign Pharmacopœias.)

Medicinal Properties.—Given to arrest sickness; also given in glandular diseases.

Dose.—15 to 50 minims.

Incompatibles.—Lime Salts and Potassium Salts are mutually antagonistic, physiologically.—*B.M.J.* '87, ii. 1033.

CALCII HYDRAS.

HYDRATE OF CALCIUM. SLAKED LIME.

$Ca(HO)_2$, eq. 74.

A white powder, strongly alkaline and caustic.

Lime recently burned, 32; Distilled Water, 20: slake the Lime, sift the powder, and keep in a well-closed vessel. Should be recently prepared.

Solubility.—Sparingly soluble in Water (1 in 900); the solution, on exposure, soon acquires a film of Carbonate of Calcium.

Test.—Should not effervesce on the addition of an acid.

(Fr., Chaux Éteinte; not in the other Pharmacopœias.)

Medicinal Properties.—The Solution (Lime Water) is used in diarrhœa connected with acidity, and in some cases of dyspepsia; also to correct chronic vomiting, and vomiting of pregnancy. Given to children for rickets.

Incompatibles.—Vegetable and Mineral Acids, Alkaline and Metallic Salts, Tartar Emetic.

Preparations.

LINIMENTUM CALCIS.

Solution of Lime, 1; Olive Oil, 1: mix. =(1 in 2).

Use.—The best liniment to apply to burns and scalds.

(Belg., Solution of Lime and Almond Oil equal parts; Fr. (Linim. Calcaire), Solution of Lime and Almond Oil equal parts; Port., Lime Water 9, Oil of Almonds, 1; Span., Lime Water 2, Oil of Almonds 1; Norw., Russ., Swed., and Swiss, Solution of Lime and Linseed Oil equal parts; U.S., Solution of Lime and Cotton-seed Oil equal parts; all by weight; not in the others.)

LIQUOR CALCIS. SOLUTION OF LIME, or LIME WATER.

Slaked Lime, 1; Distilled Water, a sufficiency; wash the Slaked Lime with some of the Water till the washings cease to give any precipitate with Nitrate of Silver acidified with Nitric Acid; then add it to 80 of the Water and shake well for two or three minutes; after twelve hours decant into a well-stoppered green-glass bottle.

NOTE.—Washing the Lime is an improvement, to get rid of any Chloride of Calcium or alkalies that may be present.

Test.—10 ounces require for neutralization at least 180 grain-measures of volumetric solution of Oxalic Acid, which corresponds to about 5 grains of Lime CaO.

Lime Water, if saturated, should precipitate on boiling, owing to the less solubility of the Hydrate in hot than in cold water.

Bottles containing lime water should be kept full, and well closed from the air. Each ounce contains about $\frac{1}{2}$ gr. of Lime.

Dose.—$\frac{1}{2}$ to 2 oz. as an antacid. *Brit. Ph. Dose.*—1 to 4 oz.

Usually given in milk.

(Austr., Belg., and Hung., Aqua Calcis; Dan., Dutch, Norw., and Swed., Solutio Hydratis Calcici; Fr., Eau de Chaux; Ger., Aqua Calcariæ; Port., Agua de Cal; Russ., Calcaria Caustica Soluta; Span., Solucion de Cal; Swiss, Liquor Calcii Oxydati; U.S., Liquor Calcis.)

Water becomes saturated with much less lime than ordered, therefore Liquor Calcis is of the same strength in all the Pharmacopœias.

Used in the preparation of Argenti Oxidum, Linimentum Calcis, and Lotiones Hydrargyri Flava and Nigra.

LIQUOR CALCIS SACCHARATUS.

Slaked Lime, 1; Refined Sugar in powder, 2; Distilled Water, 20: digest for some hours, with occasional agitation, and finally separate the clear solution with a syphon, avoiding unnecessary exposure to air. It should be kept in well-closed vessels. =(about 1 in 65).

It has been shown that the colouration on keeping is due to the presence of Iron in the Lime employed, as when this is free from Iron no change takes place.—*P.J.* xix. 849.

1 oz. = about 16 oz. Lime Water.

Test.—Sp. g. 1·052. 1 fluid ounce (460·2 grains by weight) requires for neutralization 254 grain-measures of the volumetric solution of Oxalic Acid, which corresponds to 7·11 grains of Lime, CaO.

Dose.—15 to 60 minims in milk.

(Hung., Aqua Calcis Saccharata; not in the other Pharmacopœias.)

Not Official.

LINIMENT FOR FRECKLES.—Liniment of Lime, 8; Solution of Ammonia, 1: mix.

CALCII HYPOPHOSPHIS.

HYPOPHOSPHITE OF CALCIUM.

Syn. Hypophosphite of Lime.

$Ca(PH_2O_2)_2$, eq. 170.

Obtained by heating phosphorus and nearly twice its weight of hydrate of Calcium with water until phosphuretted hydrogen gas ceases to be evolved, then filtering the liquid, separating uncombined lime with carbonic acid gas, and evaporating the remaining solution until the salt separates in a crystalline condition. This is sometimes improved by recrystallization.

A white crystalline salt, with a pearly lustre.

Solubility.—1 in 8 of water; it is not more soluble in boiling water. Insoluble in spirit.

Tests.—The aqueous solution yields with Oxalate of Ammonium a white precipitate of Oxalate of Calcium insoluble in Acetic Acid but soluble in Hydrochloric Acid, and with Perchloride of Mercury a white precipitate of Mercurous Chloride changing to grey, owing to the reducing action of the Hypophosphite. 5 grs. boiled for ten minutes with a solution of 12 grs. of Permanganate of Potassium yields on filtration a nearly colourless solution. Heated to redness it ignites, and leaves a reddish-coloured residue amounting to about 80 per cent. of the salt.

The loss on ignition varies so greatly with the conditions employed that it does not form a satisfactory test. When ignited in an open crucible the salt *gains weight* by oxidation, while in a covered crucible the loss may amount to 14 per cent., the residue, however, gaining weight when air is admitted. When strongly heated the residual powder is pure white; on cooling it becomes a dull brown, changing on exposure to air to an orange-red colour. When fused into white globules the colour does not return on cooling.

(Belg., Hypophosphis Calcii; Dutch, Hypophosphis Calcicus; Fr., Hypophosphite de Chaux; Port., Hypophosphito de Cal; Russ., Calcaria Hypophosphorosa; Span., Hipofosfito Calcico; Swiss, Calcium Hypophosphorosum; U.S.; not in the others.)

Medicinal Properties.—Given in cases of nervous and general debility; it was supposed at one time to be useful in pulmonary consumption.

Dose.—5 to 10 grs. in water.

Not Official.

GLYCEROLA HYPOPHOSPHITUM.—Hypophosphites of Calcium, Potassium, and Sodium, of each 1; dissolve these in Water 40; filter and add Sugar 40; Orange-flower Water 2; Cherry-laurel Water 2; dissolve and add Glycerine 12, and filter.

Dose.—1 to 2 drachms.

SYRUPUS CALCII HYPOPHOSPHITIS.—Hypophosphite of Lime, 3; Water, 30 Sugar, 36.

Dose.—A fluid drachm, containing 3 grains.

SYRUPUS CALCII, MANGANESII ET POTASSII HYPOPHOSPHITUM (*B.P.C.*).—Hypophosphite of Calcium, 320 grs.; Hypophosphite of Manganese, 160 grs.; Hypophosphite of Potassium, 160 grs.; Boiling Distilled Water, 4 ozs.; Syrup to make 20 ozs.: rub together in a hot mortar the Salts and the Water till nearly the whole is dissolved, then add the Syrup. Filter or decant.

Dose.—30 to 60 mins.

This was introduced into *B.P.C.* 1887, but omitted in *B.P.C.* 1888.

CALCII PHOSPHAS.

PHOSPHATE OF CALCIUM.

$Ca_3(PO_4)_2$, eq. 310.

A light white amorphous powder, prepared by dissolving Bone Ash in Hydrochloric Acid and precipitating with Ammonia.

Insoluble in water.

Tests.—Of the recently dried powder, 10 grains dissolve perfectly, and without effervescence, in Diluted Hydrochloric Acid (indicating absence of Carbonate and Silica); and the solution yields with Ammonia a white precipitate, which is insoluble in boiling Solution of Potash, and when washed and dried weighs nearly 10 grains.

Commercial samples we find to contain 15 to 18 per cent. of water, so that the formula probably requires the addition of $3H_2O$, corresponding to 14·8 per cent., the excess being hygroscopic moisture, and dried off at 212° F. The percentage of Lime and Phosphoric Acid also differ greatly from the theoretical numbers, a typical specimen giving CaO 44·6 per cent. (theory 54·2) and P_2O_5 54·3 per cent. (theory 45·8). On reprecipitating a solution in Hydrochloric Acid by Ammonia, the excess of Phosphoric Acid remains in solution and the precipitate, dried at 212°, seldom weighs more than 8 grains. This 8 grains redissolved in Hydrochloric Acid and reprecipitated by Ammonia does not again show a loss, indicating that the commercial Calcis Phosphas Precip. is not made by the B.P. process.

(Austr., Ger., Hung. and Swiss, Calcium Phosphoricum; Belg. and Dutch, Phosphas Calcicus; Fr., Phosphate de Chaux; Port., Phosphato de Cal; Russ., Calcaria Phosphorica; Span., Fosfato Calcico; U.S., Calcii Phosphas Præcipitatus; not in Dan., Norw., or Swed.)

Medicinal Properties.—For rickets and mollities ossium; said to be useful in scrofulous affections, and to promote union of bone fractures.

Dose.—10 to 20 grs.

Contained in Pulvis Antimonialis,—2 parts in 3.

CALCII SULPHAS.

SULPHATE OF CALCIUM.

Syn. Sulphate of Lime. Calcined Gypsum. Plaster of Paris.

Native Sulphate of Calcium ($CaSO_4, 2H_2O$, eq. 172) rendered nearly anhydrous by heat.

(Austr., Dan., Ger., Hung., Norw., Russ. and Swed.; not in the others.)

Introduced for the preparation of Calx Sulphurata.

CALX.

LIME.

An alkaline earth, Oxide of Calcium, CaO, eq. 56, with some impurities, obtained by calcining Chalk or Limestone mixed with

Carbon, so as to expel Carbonic Acid gas. In hard flaky masses, which, when well sprinkled with water, should crack, swell up, evolve much heat, and crumble to powder.

Solubility.—At 32° F. twenty oz. of water dissolve 13·25 grs.
60° ditto 11·2
212° ditto 6·7

Test.—If previously slaked, it dissolves without effervescence in Diluted Hydrochloric Acid, and if this solution be evaporated to dryness, and the residue redissolved in water, only a very scanty precipitate forms on the addition of Saccharated Solution of Lime—indicating absence of Phosphate of Calcium.

(In all the Pharmacopœias.)

Preparation.

CALCII HYDRAS. See p. 111.

CALX CHLORINATA.

CHLORINATED LIME.

A product obtained by exposing Slaked Lime to the action of Chlorine Gas as long as the latter is absorbed; it may be regarded as consisting chiefly of a compound of Hypochlorite and Chloride of Calcium ($CaCl_2O_2, CaCl_2$), or as a direct compound of Chlorine and Lime ($CaOCl_2$.)

A dull white powder which becomes moist and gradually decomposes on exposure to the air, with a feeble odour of Chlorine.

It should be preserved in well-closed vessels, in a cool and dry place.

Partially soluble in Water and in Rectified Spirit. Decomposed by acids with formation of Hypochlorous Acid, which in the case of Hydrochloric Acid reacts with it to form Chlorine.

Test.—When fresh, 5 grains mixed with 15 grains of Iodide of Potassium, and dissolved in 4 fluid ounces of water, produce, when acidulated with 1 fluid drachm of Hydrochloric Acid, a reddish solution which requires for the discharge of its colour at least 467 grain-measures of the volumetric solution of Hyposulphite of Sodium, corresponding to 33 per cent. of available Chlorine.

It should be noted that only a good and well-kept sample will yield this percentage of Chlorine.

In this test, the Hydrochloric Acid, acting on the Hypochlorite of Calcium, liberates Chlorine, and this reacting on the Iodide of Potassium, sets free an equivalent quantity of Iodine, which, if the Chlorinated Lime be good, will require the quantity stated of solution of Hyposulphite of Sodium to convert it into colourless Iodide of Sodium and Tetrathionate of Sodium.

(Dan., Norw., Swed. and U.S., Calx Chlorata; Austr. and Swiss, Calcium Hypochlorosum; Belg., Hypochloris Calcii; Fr., Chloruro de Chaux Sec; Ger. and Hung., Calcaria Chlorata; Port., Cal Chlorada; Russ., Calcaria Hypochlorosa; Span., Hipoclorito Calcico Clorurado; Austr., Dan., Ger., Hung., Norw., Russ., Swed. and Swiss, contain 20 p. c. of available Chlorine; Belg., 31·77 p. c.; Fr. and Span., 32 p. c.; U.S., 25 p. c.; Port., not indicated; not in Dutch.)

Used in the preparation of Chloroform and Liquor Sodæ Chlorinatæ.

Preparations.

LIQUOR CALCIS CHLORINATÆ.

Chlorinated Lime, 1; Distilled Water, 10; triturate and shake well together for three hours in a bottle and strain. =(1 in 10).

Test.—Sp. g. 1·055. 80 grains by weight mixed with 20 grains of Iodide of Potassium dissolved in 4 ounces of water, when acidulated with 2 drachms of Hydrochloric Acid, give a red solution, which requires for discharge of its colour not less than 450 grain-measures of the volumetric solution of Hyposulphite of Sodium, corresponding to about 2 per cent. of available Chlorine. (Explanation of Test given under Calx Chlorinata.)

When made with the best Chlorinated Lime, and is quite fresh, it may yield about 3 per cent. of available Chlorine.

(Brit., 1 in 10; Belg., 2·2 in 100; Fr., 1 in 45; Span., 1 in 40; Norw., 2 in 100; Russ., Calcaria Hypochlorosa Soluta, 1 in 8, and Liquor Calcariæ Hypochlorosæ, 1 in 40; Swed., 1 in 40; not in the others.)

Medicinal Properties.—Not much employed internally; externally as a lotion to foul ulcers, burns, chilblains, and cutaneous eruptions, especially the itch. A powerful disinfecting and bleaching agent.

Dose.—20 to 40 minims in a wineglassful of water.

Antidotes.—In case of poisoning by Chlorinated Lime the antidotes are, Emetics, White of Egg, Milk, Flour; *not* Acids.

VAPOR CHLORI.

Chlorinated Lime, 2 oz.; cold Water, sufficient to moisten it: the vapour to be inhaled from a suitable apparatus.

(Span., Fumigium Chlori; not in the others.)

CALX SULPHURATA.

SULPHURATED LIME.

Syn. Sulphide of Calcium.

A nearly white powder containing not less than 50 per cent. of Sulphide of Calcium, CaS., eq. 72.

Sulphate of Calcium, 7; Wood Charcoal, 1; both in fine powder.

Mix thoroughly; heat to redness in an earthen crucible until the black colour has disappeared. Cool, and at once place the whitish residue in a stoppered bottle.

Test.—If 8 grs. be added to a cold solution of 14 grs. of Sulphate of Copper in an ounce of Water, a little Hydrochloric Acid added, and the mixture then well stirred and heated to a temperature approaching that of ebullition until all action has ceased, the filtered liquid should give no red colour with Ferrocyanide of Potassium (presence of at least 50 per cent. real Sulphide of Calcium).

(Austr., Belg., Dutch, Russ. and U.S.; not in the other Pharmacopœias.)

Medicinal Properties.—Useful for boils and skin affections; has also been used as a depilatory.

Dose.—$\frac{1}{10}$ to 1 gr., given in pill, coated.

Not Official.

CALENDULA.

COMMON MARIGOLD.

The florets of *Calendula officinalis.*

(Span., flowers; U.S., flowering herb; not in the others.)

Preparation.

TINCTURA CALENDULÆ FLORUM.—Marigold flowers, dried, in No. 20 powder 4; Proof Spirit sufficient to percolate 20.

Dose.—5 to 20 minims.

(U.S., 1 in 5; not in the others.)

This has been added to the B.P.C. formulary.

CALUMBÆ RADIX.

CALUMBA ROOT.

The root of the perennial herb, *Jateorhiza calumba,* sliced transversely and dried; from the forests of Eastern Africa between Ibo and the Zambesi. It is easily reduced to powder, which has a greenish tinge; it becomes browner with age, and deepens in colour when it is moistened.

Tests.—Moistened with a solution of Iodine, it becomes bluish-black—indicating presence of Starch. A decoction is not blackened by the persalts of Iron—indicating absence of astringent matter.

(In all the Pharmacopœias.)

Medicinal Properties.—A bitter stomachic and tonic, useful in debility of the digestive organs, and to allay nausea attendant on pregnancy. Given in convalescence from acute diseases, combined with Alkalies or Bismuth. It is one of the few bitters that can be prescribed with Salts of Iron.

Dose.—Of the powder 5 to 20 grs. three or four times a day.

Frequently given with powdered Ginger and Rhubarb.

Preparations.

EXTRACTUM CALUMBÆ.

Calumba Root, cut small, 1; Proof Spirit, 5: macerate in half the Proof Spirit for twelve hours, strain and press; macerate again with the remaining spirit, strain and press; mix and filter the liquors, recover the spirit by distillation, and evaporate the residue by the heat of a water-bath to a pill consistence.

16 parts of Root yield 1 part of Extract.

This preparation is now made with Proof Spirit; as pointed out in previous editions, the extract made with Spirit keeps well, but the aqueous extract becomes mouldy by keeping.

Dose.—2 to 10 grs.

(Austr., Hung. and Swiss, made with 70 p. c. Alcohol; Belg., Fr. and Span., made with 60 p. c. Alcohol; Dutch, made with 90 p. c. Alcohol; Port., made with 65 p. c. Alcohol; Russ., with 38 p. c. Spirit; Swed., made with 50 p. c. Alcohol; U.S., fluid extract only, made with Dilute Alcohol; not in Dan., Ger., or Norw.)

INFUSUM CALUMBÆ.

Calumba Root, cut small, 1; cold Distilled Water, 20: macerate for half an hour and strain. =(1 in 20).

The time has been reduced from one hour to half an hour.

Dose.—1 to 2 oz.

(Span., 1 in 100; not in the other Pharmacopœias.)

Calumba root contains starch and mucilage, both of which are dissolved by hot water; cold water dissolves the mucilage only.

Physicians prescribing for patients who wish to take with them a supply of their medicines containing Infusion of Calumba will find 1 drachm of Tincture to be of about the same strength as 1 oz. of the Infusion.

TINCTURA CALUMBÆ.

Calumba Root, cut small, 1; Proof Spirit, 8: macerate forty-eight hours with 6 of the spirit, agitating occasionally; pack in a percolator, and let it drain, then pour on the remaining spirit; when it ceases to drop, press, and add sufficient Proof Spirit to make 8. =(1 in 8).

Dose.—½ to 2 drms. for an adult; 5 minims for a child.

(Belg., Fr., Port., Russ., Span. and Swiss, 1 and 5; U.S., 1 in 10: all by weight; not in the others.)

CAMBOGIA.

GAMBOGE.

A Gum Resin, obtained from *Garcinia Hanburii.*

It is imported from Siam, and consists of about 75 per cent. of Resin and 15 to 20 of Gum.

Solubility.—About three-fourths is soluble in Rectified Spirit, the solution is rendered an opaque yellow by water; three-fourths also soluble in Ether; entirely soluble in Ammoniated Alcohol, which is not rendered turbid by the addition of water.

It forms a yellow emulsion when rubbed with water.

Test.—An emulsion made with boiling water, and cooled, does not become green on addition of Solution of Iodine—indicating absence of flour or starch.

(Belg., Gummi Guttæ; Dan. and Russ., Gummi-Resina Gutti; Fr., Gomme-Gutte; Ger., Gutti; Port., Gomma-Guta; Span., Gutagamba; Swed., Gummi-Resina Gutta; U.S., Cambogia; not in the others.)

Medicinal Properties.—A powerful purgative. It is employed in the treatment of dropsy, attended with torpidity of the bowels, generally in combination with Elaterium, Bitartrate of Potassium, or Jalap. As it is apt to occasion much sickness and griping, it is best given in small doses, repeated at short intervals, until it operates.

It may be given in pill or emulsion, or dissolved in an alkaline solution; the last method has been recommended in dropsical complaints.

Stimulates the intestinal glands, but not the liver.—Dr. Rutherford.

Dose.—1 to 5 grs. In cases of tænia, may be increased to 10 or 15 grs.

Preparation.

PILULA CAMBOGIÆ COMPOSITA.

Gamboge, 1; Barbadoes Aloes, 1; Compound Powder of Cinnamon, 1; Hard Soap, 2; Syrup, a sufficiency: mix. =(1 in 6 nearly).

Dose.—5 to 10 grs.

(Fr. and Belg. (Pilule Anderson) Aloes, Gamboge, Oil of Anise, and Honey, Port., Pilulas do Aloes o Gomma Guta, the same with Soap; Fr. has also Pilules de Bontius, containing Ammoniacum and Vinegar instead of Cinnamon and Soap; U.S., Pil. Catharticæ Comp., contains Gamboge about 1 in 14; not in the others.)

CAMPHORA.

CAMPHOR.

A Stearoptene, $C_{10}H_{16}O$, obtained from the wood of *Cinnamomum camphora*, imported in a crude state from China (Formosa) and Japan, and purified in this country by sublimation.

Usually in bell-shaped masses or in tablets.

The Borneo Camphor from the Dryobalanops, though virtually the same as the official, is valued very much more by the Chinese.

Solubility.—1 in 700 of Water; 1 in $1\frac{1}{4}$ of Rectified Spirit; or by weight, 1 in 1; 4 in 1 of Chloroform; 12 in 7 of Ether; 1 in 4 of Olive Oil (slowly); 1 in $1\frac{1}{2}$ of Oil of Turpentine; 2 in 1 of Glacial Acetic Acid; insoluble in Alkalies. 3 of Camphor rubbed with 1 of Carbolic Acid crystals become a clear solution. 3 of Camphor and 3 of Hydrate of Chloral rubbed together liquefy. Milk is a solvent and a good vehicle to administer it in.

Camphor powders readily when a small quantity of Alcohol is used.

Its sp. g. varies from ·986 to ·996. It evaporates entirely if left exposed to the air. It melts at 347° F. (175° C.), boils at 401° F. (205° C.), and in close vessels sublimes unchanged.

(In all the Pharmacopœias.)

Medicinal Properties.—Stimulant at first, afterwards sedative; antispasmodic, and diaphoretic. A feeble antiseptic.

In moderate doses, it produces (in health) mental exhilaration, increases the heat of the skin, and occasions diaphoresis. It allays nervous irritation. It is useful in cholera and diarrhœa, but in large doses it causes giddiness and disposition to sleep. It is an antaphrodisiac, and given in chordee. Camphor Spirit mixed with warm water to bathe the nostrils is highly useful in hay fever, and relieves irritation of the nostrils in common cold; also used as an inhalation.

Externally, it is used as a counter-irritant to relieve pain.

Camphor Water is a good vehicle for giving Carbonate of Ammonium, and if the proportions are nicely balanced, makes a pleasant draught; thus, Carbonate of Ammonium 5 grs., Camphor Water $\frac{1}{2}$ oz., Water 1 oz.

Dose.—1 to 10 grs.

Symptoms of poisoning by Camphor: convulsions, lividity of countenance, stupor, arrest of urinary secretions.

Antidotes.—Stomach-pump or emetics, stimulants freely, and warmth to the extremities.

Used in the preparation of several Liniments and Unguentum Hydrargyri Compositum.

Preparations.

AQUA CAMPHORÆ. *Syn.* Mistura Camphoræ.

Camphor, crushed, $\frac{1}{2}$ oz.; Distilled Water, 1 gallon = 160 oz.: macerate at least two days, confining the camphor under the water in a muslin bag attached to a glass rod.

Dose.—1 to 2 oz = about $\frac{3}{4}$ to $1\frac{1}{2}$ gr. of Camphor.

(Dan., Mistura Camphorata, contains Camphor, Mucilago of Acacia, Syr. Rheados, and Elderflower Water; Norw., similar to Dan.; Fr., Eau Camphrée; Port. and Swiss, same as Brit.; Span., Camphor, Elder, Honey, and Melissa Water; U.S., dissolve Camphor in Alcohol and absorb with Cotton Wool, let Alcohol evaporate and pour on Distilled Water. Not in the others.)

LINIMENTUM CAMPHORÆ.

Camphor, 1; Olive Oil, 4: dissolve. =(about 1 in 5).

(Austr. (Oleum Camphoratum), 1 and 3; Dan., Norw. and Swed., 1 and 4; Belg., Fr., Ger. and Russ., 1 and 9; Span. (Aceite Alcanforado), 1 and 8; all with Olive Oil; Port., 1 and Almond Oil 9; Hung., 1 and Sesame Oil 2; Swiss, 1 and Olive Oil or Sesame Oil 9; U.S., 1 and Cotton-seed Oil 4; all by weight; not in Dutch.)

LINIMENTUM CAMPHORÆ COMPOSITUM.

Camphor, 5; Oil of Lavender, $\frac{1}{4}$; Strong Solution of Ammonia, 10; Rectified Spirit, 30: dissolve the oil and camphor in the spirit, then add the ammonia gradually, shaking them together until a clear solution is formed. =(about 1 in 8).

Stimulating. Most useful in tic-douloureux and chronic rheumatism. Painful neuralgia has been relieved by applying lint previously soaked in the liniment and covered with a dry napkin until redness is produced, and then lightly rubbing the part with the Solution of Bimeconate of Morphine until relieved.

Linimentum Ammoniato-Camphoratum.

Belg. Liquid Ammonia, 1; Camphorated Oil, 9.
Dan. Solution of Ammonia, 1; Camphorated Oil, 1; Olive Oil, 2.
Fr. Solution of Ammonia, 1; Camphorated Oil, 9.
Ger. Water of Ammonia, 1; Camphorated Oil, 3; Poppy Oil, 1.
Norw. Solution of Ammonia, 2; Camphorated Oil, 1; Olive Oil, 2.
Port. Liquid Ammonia, 1; Camphorated Oil, 4.
Russ. Solution of Ammonia, 2; Camphorated Oil, 3; Olive Oil, 3.
Swed. and Swiss, Solution of Ammonia, 1; Camphorated Oil, 3.

(Not in the other Pharmacopœias.)

SPIRITUS CAMPHORÆ. *Syn.* TINCTURA CAMPHORÆ.

Camphor, 1; Rectified Spirit, 9: dissolve. =(1 in 10).

Test.—Sp. g. about 0·850.

Dose.—10 to 30 minims in Milk or on Sugar.

(Austr., Belg., Dan., Dutch, Fr. (Teinture de Camphre Conc.), Ger., Norw., Port., Swed., Swiss and U.S., 1 in 10; Russ., 1 in 13: Hung., about 1 in 7; Span., 1 and 23; all by weight.)

TINCTURA CAMPHORÆ COMPOSITA. *Syn.* PAREGORIC ELIXIR.

Opium, in powder, 40 grs.; Benzoic Acid, 40 grs.; Camphor, 30 grs.; Oil of Anise, $\frac{1}{2}$ drm.; Proof Spirit, 20 oz.: macerate seven days, filter, and add sufficient Proof Spirit to measure 20 oz. =(1 grain of Opium in 240 minims).

As all the ingredients except the Opium dissolve readily, Opium 40 grs. might advantageously be replaced by the corresponding quantity of Tincture of Opium, 585 minims.

1 fluid drm. contains $\frac{1}{4}$ gr. Powder of Opium = $\frac{1}{8}$ gr. of Extract of Opium.

Given with equal proportions of Tinct. of Squill to allay spasmodic cough in bronchitis and in phthisis.

Dose.—15 to 60 minims, or for a child 2 to 5 mins.

Belg. **Elixirium Paregoricum.**—Opium, 5; Benzoic Acid, 5; Camphor, 3·5; Oil of Anise, 2·5; Alcohol, 80 p. c. 1000.

Dan. Norw. and Swed. **Tinctura Thebaiaca Benzoica.**—Opium, 6; Benzoic Acid, 6; Camphor, 4; Oil of Anise, 3; Diluted Alcohol, 1200.

Fr. **Elixir Paregorique.**—Extract of Opium, 3; Benzoic Acid, 3; Camphor, 2; Oil of Anise, 3; Alcohol, 60 p. c. 650.

Ger. **Tinctura Opii Benzoica.**—Opium, 1; Benzoic Acid, 4; Camphor, 2; Oil of Anise, 1; Diluted Alcohol, 192.

Port. **Tinctura de Opio Composta,** and Swiss, **Tinctura Opii Benzoica.**—Opium, 1; Benzoic Acid, 1; Camphor, 1; Oil of Anise, 1; Alcohol 65 p. c. 200.

Russ. **Tinctura Opii Benzoica.**—Opium, 1; Benzoic Acid, 4; Camphor, 2; Oil of Anise, 2; Alcohol 70 p. c. 192.

U.S. **Tinctura Opii Camphorata.**—Opium, 4; Benzoic Acid, 4; Camphor, 4; Oil of Anise, 4; Glycerine, 40; Diluted Alcohol to 1000.

All by weight.

Not Official.

CAMPHOR BALLS.—Camphor, 2; White Wax, 5; Spermaceti, 3; Oil of Almonds 3; Tincture of Tolu, $\frac{1}{4}$: melt, and pour into half-ounce gallipots.

CAMPHORA CUM CRETA.—Camphor, 1; Prepared Chalk, 8: powder the camphor by rubbing it with a few drops of rectified spirit, mix in the chalk, and pass the whole through a sieve. A dentifrice.

CAMPHORATED VINEGAR.—Camphor, 1; Alcohol, 60; Vinegar, 180: mix.

CERATUM CAMPHORÆ.—Camphor, 2; White Wax, 3; Lard, 4; Oil of Almonds, 3: melt together and stir till cold.

ESSENTIA CAMPHORÆ.—Camphor, 1; Rectified Spirit, 20:—or Camphor, 1; Rectified Spirit, 18, Tincture of Myrrh, 2. In domestic use for making Julep. Given for diarrhœa, 5 minims every 10 or 15 minutes in water till diarrhœa is arrested.

SPIRITUS CAMPHORÆ FORTIOR (Rubini's Essence).—A saturated solution, in Rectified Spirit.

CAMPHORIC ACID.—Slightly soluble in Water, more readily in Rectified Spirit. A 1 per cent. solution has been recommended in acute and chronic affections of the respiratory passages.—*P.J.* xix. 507.

One gramme given 3 or 4 times a day, or 2 grammes in the evening, checks the night sweating in phthisis.—*L.M.R.* '88, 276.

Not Official.

CAMPHORA MONOBROMATA.

MONOBROMATED CAMPHOR.

$C_{10}H_{15}BrO$, eq. 231.

Colourless prismatic needles or scales, with a camphoraceous odour and taste.

Almost insoluble in Water; soluble 1 in 12 of Rectified Spirit; 10 in 7 of Chloroform; 1 in 2 of Ether: 1 in 8 of Olive Oil; sparingly in Glycerine.

Tests.—It melts at 169° F. (76° C.). If boiled with test-solution of Nitrate of Silver, it is decomposed and yields Bromide of Silver. It is soluble without decomposition in cold concentrated Sulphuric Acid, and will again separate unaltered if the solution be poured into water.

U.S.P. gives the melting point at 149° F., but this is obviously wrong.

(Dutch, Fr., Port., Russ., Span. and U.S.; not in the others.)

Medicinal Properties.—Hypnotic and sedative. Given in hysteria, epilepsy, chorea, spermatorrhœa, and delirium tremens; but its use requires caution.

Dose.—2 to 5 grains can be prescribed in pills with a mixture of Glucose and Treacle (equal parts), or can be dissolved in Almond or Olive Oil and mixed with mucilage and water. It is also given with Extract of Belladonna.

Larger doses are sometimes given in delirium tremens.

It has been stated to be an antidote to Strychnine.

CANELLÆ CORTEX.

CANELLA BARK.

The Bark of *Canella alba*, deprived of its corky layer and dried.

Imported from the West Indies.

(Fr., Port. and Swed.; not in the others.)

Medicinal Properties.—An aromatic, bitter tonic.

Contained in Vinum Rhei.

CANNABIS INDICA.

INDIAN HEMP.

The flowering or fruiting tops of the female plants of *Cannabis sativa*, from which the resin has not been removed, dried. Cultivated in India.

It is known in India as Gunjah or Ganga.

We are indebted to Dr. O'Shaughnessy for the first introduction of Indian Hemp into this country. He brought over a quantity from India, which the Author converted into extract for him, and distributed amongst a large number of the profession under Dr. O'Shaughnessy's directions.

(Austr., Belg., Dan., Dutch, Fr. (Chanvre), Ger., Hung., Norw., Port. (Canhamo), Russ., Span. (Canamo), Swed., Swiss and U.S.

Medicinal Properties.—Sedative, anodyne, and hypnotic. Has been used with success in migraine and delirium, also in menorrhagia and dysmenorrhœa. It is combined with Belladonna in whooping cough. In tetanus and hydrophobia.

It does not produce constipation or loss of appetite, on the contrary it restores the appetite which has been lost by chronic opium and chloral drinking.—*L.* '89, i. 625.

Not prescribed in powder.

Antidotes.—In case of over-dose, hot brandy-and-water may be given, vegetable acids, such as lemon juice, vinegar, and the like, and the patient be allowed to sleep. A blister to the nape of the neck is recommended to control its violent action.

Preparations.

EXTRACTUM CANNABIS INDICÆ.

Indian Hemp, in coarse powder, 1; Rectified Spirit, 5: macerate seven days, press out the tincture, distil off the spirit, and evaporate to a soft extract.

6 of Indian Hemp yield 1 of Alcoholic Extract.

Dose.—¼ to 1 grain in pill.

(Austr., Belg., Dutch, Fr., Ger., Hung., Norw., Port., Russ., Swed., Swiss, and U.S.: not in the others.)

In delirium tremens, 2 grains given every hour for four times gave relief. *L.M.R.* '81, 192.

Extract of Indian Hemp varies considerably in strength, consequently the dose should always be small to commence with; toxic symptoms have been produced with 1 grain.

TINCTURA CANNABIS INDICÆ.

Extract of Indian Hemp, 1; Rectified Spirit, 20: dissolve. =(1 in 20).

22 minims contain 1 gr. of extract.

Dose.—5 to 20 minims with 1 drm. of mucilage, adding 1 oz. of water.

In prescribing the Tincture it should be previously triturated with the mucilage, or the resin will be precipitated by the water.

(Belg., Ger., Port. and Swiss, 1 Extract in 20; Russ., 1 and 10; Fr., Hung. and U.S., from Herb 1 in 5; not in the others.)

Incompatibles.—Waters and Watery Infusions.

Not Official.

CANNABINÆ TANNAS.—An amorphous yellowish powder, sparingly soluble in Water, Alcohol, and Ether. Soluble in acidulated alcohol.

Dose.—4 to 8 grains, mixed with Sugar and taken as a powder.

Was introduced as a hypnotic, but its effects are very uncertain.—*T.G.*'85, 329, 379.

CANNABINON.—A soft resinous substance, generally found as a 10 p. c. trituration with Sugar of Milk, also introduced as a hypnotic, but the dose ($1\frac{1}{2}$ grains) was followed by excitement, collapse, and cramps.—*T.G.* '85, 286; *L.M.R.* '86, 434.

CANTHARIS.

CANTHARIDES.

The beetle, *Cantharis vesicatoria*, dried; collected in Spain, France, Russia, Sicily, and Hungary. Contains ·4 to ·6 p. c. of a crystalline principle, Cantharidine.

Five samples examined yielded ·38, ·48, ·58, ·60, and ·62 p. c. of well crystallised Cantharidine.

Free from mites.

The powder should be dry and kept closely corked, for if at all damp it is apt to acquire a putrid odour. A lump of camphor kept in it prevents mites.

(Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Norw., Port., Russ., Span., Swed., Swiss and U.S.)

Medicinal Properties.—Externally its effects are rubefacient and irritant; by continued application it is vesicant. For the latter purpose the Charta or Liquor Epispasticus is used, and is especially effective in inflammation of deep-seated parts, as in pleuritis, pericarditis, pneumonia, etc. It acts for a longer period, and is less irritating to the patient, than Ammoniacal or Acetic Acid embrocations. Internally as tincture in chronic affections of the nervous system, paraplegia, etc. It has a diuretic effect, and is given in gleet or other mucous discharges; but it should be given cautiously, for it irritates the kidneys and sometimes produces strangury.

Has been recommended as a preventive of hydrophobia: the ointment is applied to the wound, and one grain of Powdered Cantharides given internally daily for one or two weeks, treatment being suspended in case of strangury.—*B.M.J.* '86, ii. 873; *L.R.M.* '87, 20.

It is the basis of most of the applications used to increase the growth of hair.

In chronic inflammation of the bladder it should *not* be used as a counter-irritant, from its irritating effects on the urinary organs when absorbed by the skin. A solution of Nitrate of Silver ($\frac{1}{2}$ drm. to 1 oz. of water) is to be preferred.

Antidotes.—In case of poisoning by Cantharides use Emetics or stomach pump, followed by Castor Oil and Opium. Emollient Drinks.

Preparations.

ACETUM CANTHARIDIS.

Cantharides, bruised, 2; Glacial Acetic Acid, 2; Acetic Acid, a sufficiency: add the glacial acetic acid to 13 of acetic acid, and in this mixture digest the cantharides for two hours at a temperature of 200° F. (93·3° C.); when cold place them in a percolator, and when the liquid ceases to drop, pour over the residuum 5 of acetic acid, and when the percolation is finished, press, filter, and make the whole liquid up to 20 with Acetic Acid. =(1 in 10).

Sp. g. about 1·060.

Cantharides is now ordered "bruised" instead of "in fine powder."

(Port., about 1 in 6: not in the other Pharmacopœias.)

CHARTA EPISPASTICA. Blistering Paper.

White Wax, 4; Spermaceti, $1\frac{1}{2}$; Olive Oil, 2; Rosin, $\frac{3}{4}$; Canada Balsam, $\frac{1}{4}$; Cantharides, in powder, 1; Distilled Water, 6: digest all the ingredients, except the Canada balsam, in a water bath for two hours, stirring them constantly, then strain, and separate the plaster from the watery liquid; mix the Canada balsam with the plaster melted in a shallow vessel, and pass strips of paper over the surface of the hot liquid, so that one surface of the paper shall receive a thin coating of plaster. The paper is usually ruled so as to indicate square inches.

(U.S., Charta Cantharidis; Charta Epispastica, Belg. Nos. 1 and 2, and Dutch; Fr. and Span., Papier Epispastique Nos. 1, 2, and 3; not in the others.)

COLLODIUM VESICANS. *Syn.* Blistering Collodion.

Blistering Fluid, 20; Pyroxylin, 1: add the Pyroxylin to the liquid in a stoppered bottle, and shake till dissolved.

Note.—It is necessary that Pyroxylin Brit. Ph. should be used, or disappointment will result.

(Belg., Dan., Ger., Norw., Port., Russ., Swiss, and U.S.; not in the others.)

EMPLASTRUM CALEFACIENS.

Cantharides, in coarse powder, 1; boiling Water, 5; expressed Oil of Nutmeg, 1; Yellow Wax, 1; Resin, 1; Soap Plaster, 8; Resin Plaster, 13: infuse the cantharides in the water for six hours, strain and press through calico, evaporate by a water bath till reduced to one-third, then add the rest of the ingredients, melt and stir all together. =(about 1 in 25).

The quantities of Soap Plaster and Resin Plaster have been reversed.

(U.S., Emplastrum Picis cum Cantharide, 1 in 36; not in the others.)

EMPLASTRUM CANTHARIDIS.

Cantharides, in powder, 12; Yellow Wax, 7½; prepared Suet, 7½; Resin, 3; prepared Lard, 6: melt the last four together, and stir in the first: continue the stirring until cold. =(1 in 3).

(Austr. and Fr., 1 in 3; Belg., Dutch, Hung., Norw., Span. and Swed., about 1 in 3; Dan., Ger., Port. and Russ., about 1 in 4; Swiss, 1 in 5; not in U.S.)

Emplastrum Cantharidum Perpetuum, Austr., Dan., Norw., Swed. and Swiss, 1 in 7½; Hung., 1 in 5½; Belg. and Russ., 1 in 8; Ger., 1 in 10; not in the others.

Oiled tissue paper, or very thin silk, is sometimes placed between the plaster and the skin, to prevent irritant action on the urinary organs. In France, powdered Camphor is sprinkled on the blister for the same purpose.

LIQUOR EPISPASTICUS.

Blistering Liquid. *Syn.* Linimentum Cantharidis.

Cantharides, in powder, 5; Acetic Ether, a sufficiency: mix the Cantharides with 3 of Acetic Ether; pack in a percolator, and after twenty-four hours add Acetic Ether to percolate 20. =(1 in 4).

It should be kept in a stoppered bottle.

For a stronger preparation see Liquor Cantharidis Concentratus.

(U.S (Linimentum) Cantharides 15, Oil of Turpentine to make 100, digest hot three hours and strain; not in the others.)

TINCTURA CANTHARIDIS.

Cantharides, in coarse powder, 1; Proof Spirit, 80: macerate, agitating occasionally, for seven days in a closed vessel, strain, press, filter, and add sufficient Proof Spirit to make 80. =(1 in 80).

Dose.—5 to 20 minims.

(Brit., 1 in 72; Norw. and Swed., 1 and 30; Dan., 1 in 30, also 1 in 5; U.S., 1 in 20; Austr., 1 in 10; Fr., 1 and 10, also with Acetic Ether 1 and 10

Ger., Dutch, Port., Russ., and Swiss, 1 and 10; Span., 1 and 12½; Belg. and Hung., 1 and 5; all by weight.)

UNGUENTUM CANTHARIDIS.

Cantharides, 1; Olive Oil, 6; Yellow Wax, 1: digest the cantharides in the oil for twelve hours in a covered vessel; then place the vessel in boiling water for ¼ hour; strain through muslin with strong pressure, add the product to the wax melted, and stir till cold.

=(about 1 in 7).

Employed to promote discharge from a blistered surface.

(Belg., 1 in 11; Fr., Pommade Epispastique Verte, 1 in 33, and P. E. Jaune, 1 in 17; Port., about 1 in 23; Swiss, 1 in 7; Ger., about 1 in 5; Norw., Russ. and Swed., 1 in 5; Dan., Ung. Canth. Simplex, about 1 in 5; also (Viride) about 1 in 4; Span., 3 in 10; not in Austr., Hung. or U.S.)

Not Official.

CANTHARIDINE, $C_{10}H_{12}O_4$.—Obtained from Cantharides. White crystalline scales. Melts at 200° C.

Solubility.—1 in 1150 of Rectified Spirit; 1 in 700 of Rectified Ether, sp. g. ·720; 1 in 55 of Chloroform; 1 in 150 of Acetic Ether, but even when dissolved at 60° F. part separates on standing; 1 in 200 of Almond Oil; 1 in 65 of Oil of Cloves.

(Belg., Dutch, Fr., Port. and Span.; not in the others.)

LINIMENTUM CRINALE.—Cantharidine, 1 gr.; Acetic Ether, 6 drms.: dissolve and add Rectified Spirit, 3 oz.; Castor Oil, 1 oz.; Oil of Lavender, 15 minims.

This Liniment is highly recommended for application to the head where the hair is falling off; but after applying it a few times the head should be washed, or it may accumulate and cause too much irritation.

This preparation is stated to have produced vesication, but it is contrary to our experience, which extends over many years, and the sale of hundreds of bottles.

LIQUOR CANTHARIDIS CONCENTRATUS.—One fluid ounce = 1 ounce of Cantharides. It is obtained by repercolation with Acetic Ether, and is standardised to contain ·5 per cent. of Cantharidine. This Liquor forms a convenient substitute for Cantharides in making the various preparations; it effects a great saving of time and produces a better result.

LOTIO STIMULANS.—Vinegar of Cantharides, 1; Glycerine, 1; Tincture of Bark, ½; Orange-flower Water, 8; Rose Water, 8: mix.

A stimulating lotion for the hair.

UNGUENTUM STIMULANS.—(Erasmus Wilson's.) Cantharides in Powder, 3; Lard, 12: macerate with a moderate heat for twenty-four hours and filter through paper.

BONI'S BLISTER.—Camphor, 20; Chloral Hydrate, 30; melt and add Powdered Cantharides, 10; digest for an hour at 150° F.; filter.—*L.M.R.* '89, 19.

CAPSICI FRUCTUS.

CAPSICUM FRUIT.

The dried ripe fruit of *Capsicum fastigiatum*; imported from Zanzibar, and distinguished in commerce as Guinea Pepper and Pod Pepper. That from Nepaul has the finest flavour. These in powder are sold as Cayenne Pepper.

It yields its virtues to Water, Alcohol, Ether, Acetic Ether, and the fixed and volatile Oils.

The ash was determined from three samples of Fruits, also three samples of Pulvis Capsici: Fruits yielded, 3·75, 5·38, 4·52 p. c.; Pulvis Capsici, 4·44, 6·31, 4·49 p. c.

(Belg., Dan., Fr. (Poivre de Guinée), Ger., Port. (Pimentao), Russ., Span. (Pimiento), Swed. and U.S.; not in the others.)

Medicinal Properties.—A powerful stimulant, used chiefly as a condiment. Given in intermittent fevers with Quinine, in low forms of fever, diarrhœa, cholera, and in the black vomit of hot climates; also in alcoholic dyspepsia. Used externally as a rubefacient in rheumatism and for chilblains.

Dose.—½ to 1 gr. of the powder in a pill, or in dinner pills.

Preparation.

TINCTURA CAPSICI.

Capsicum, bruised, ¾; Rectified Spirit, 20; macerate forty-eight hours with 15 of the spirit, agitating occasionally; pack in a percolator, and let it drain, then pour on the remaining spirit; as soon as it ceases to drop, press the marc, filter and add Rectified Spirit to make 20. =(1 in 27 nearly).

Small quantities are made with less trouble by maceration or by dilution of the Strong Tincture.

Dose.—10 to 20 minims.

Tinct. Capsici, 1½ drms. (increased); Tinct. Aurant., 4 drms.; Syr. Aurant., 4 drms.; water to 6 ounces. Take a tablespoonful as required, three or four times a day, for dipsomania.—*B.M.J.* '75, ii. 415.

(Belg., 1 and 5; Dan., Ger. and Russ., 1 and 10; U.S., 1 in 20; all by weight; not in the others.)

Not Official.

TINCTURA CAPSICI FORTIOR, (Dr. Turnbull's Tincture).—Capsicum in No. 40 powder, 10; percolated with sufficient Rectified Spirit to produce 30.

This has been added to B.P.C. formulary. Previously known as *Lin. Capsici.*

Used externally for swollen chilblains as a counter-irritant, but *not* when the skin is *broken.* For **chilblains**, saturate a piece of sponge or flannel with the tincture, and rub the chilblain well until a strong tingling is produced; continue daily until recovery. A small dossil of lint or cotton, dipped into the tincture, is an excellent remedy for toothache.

Tissue paper imbued with a strong tincture of this drug, and perhaps a little mustard oil, is sold as a sinapism, to produce counter-irritation, under the name of Sinapine.

OLEO-RESINA CAPSICI (U.S.)—*Syn.* Capsicin.—Obtained by percolating Capsicum with Stronger Ether, distilling off the Ether, and straining out the fatty matter which separates. It is a thick liquid of a yellowish red colour, which becomes very fluid when gently heated, and at a high temperature volatilizes. ½ a grain only, thus volatilized in a large room, will cause all who respire the air of the room to cough and sneeze. It is soluble in Alcohol, Ether, and Oil of Turpentine.

EMPLASTRUM CAPSICI, (U.S.)—Spread an even layer of Resin Plaster on muslin, and allow it to cool; then apply a thin coating of Oleo-resin of Capsicum, by means of a brush, leaving a narrow blank margin along the edges.

Each square inch should contain 1 grain of Oleo-resin of Capsicum.

UNGUENTUM OLEO-RESINÆ CAPSICI, (*B.P.C.*)—Oleo-resin of Capsicum, 2; Yellow Wax, 1; Benzoated Lard, 8. Melt the Wax and Lard at a low temperature, add the Oleo-Resin, mix, and strain if necessary. Stir till cold.

CARBO ANIMALIS.

ANIMAL CHARCOAL. BONE BLACK.

The residue of bones which have been exposed to a red heat without the access of air; consists principally of Carbon, and Phosphate and Carbonate of Calcium.

When burnt with free access of air yields about 88 p.c. of White Bone Ash, Os Ustum.

(Belg., Dutch, Fr., Port. (Carvao Animal), Russ., and U.S.; not in the others.)

CARBO ANIMALIS PURIFICATUS.

PURIFIED ANIMAL CHARCOAL.

Animal Charcoal from which its earthy salts have been almost wholly removed.

Bone Black, 16; Hydrochloric Acid, 10; Distilled Water, a sufficiency.

Digest the Bone Black in the acid mixed with twice the quantity of water at a moderate heat for two days, agitating occasionally, thoroughly wash on a calico filter, until what passes through gives scarcely any precipitate with Nitrate of Silver; dry, and heat to redness, in a covered crucible.

Tests.—If it contain Carbonate of Calcium, Hydrochloric Acid will cause effervescence; and if Phosphate of Calcium be present, the acid will dissolve the salt, and yield it as a precipitate on the addition of Ammonia. When burned at a high temperature, with a little red Oxide of Mercury and free access of air, it leaves not more than about 2 p.c. of residue.

Commercial samples contain much more ash than the above.

(Belg., Fr., U.S.; not in the others.)

Medicinal Properties.—Dr. Garrod and Dr. Rand of Philadelphia, state that it has the property of counteracting the poisonous effects of Morphine, Strychnine, and Aconitine. Dr. Rand says that these alkaloids may be swallowed with impunity if mixed in due proportion with Purified Animal Charcoal, and we find that an acid solution of Strychnine containing ·01 gramme of alkaloid ceases to give a precipitate with Meyer's reagent after occasional agitation during one hour with 1 gramme of Powdered Animal Charcoal. It destroys the fœtor of ulcers, etc. It is much used as a decolorizing agent in various pharmaceutical processes, and will decolorize Claret.

Dose.—20 to 60 grs.

CARBO LIGNI.

WOOD CHARCOAL.

Wood charred by exposure to a red heat without access of air.

The Oak, Beech, Hazel, Willow, and Poplar are employed.

Test.—When burned at a high temperature, with free access of air it leaves not more than 2 per cent. of ash.

(In all the Pharmacopœias; Fr., Charbon Végétal.)

Medicinal Properties.—Antiseptic and absorbent. Given in powder or in capsules in cases of distension by intestinal gas, and in foul eructations; also in dyspepsia attended with flatus and acidity. Externally, as a poultice, it absorbs the fœtor of ulcers.

Respirators of Charcoal are made to protect the lungs from poisonous gases.

Dose.—20 to 60 grs.

Preparation.

CATAPLASMA CARBONIS.

Wood Charcoal, in powder, 1; crumb of Bread, 4; Linseed Meal, 3; boiling Water, 20: soak the bread in the water near the fire for ten minutes, add the linseed meal and half the charcoal, stirring to a soft poultice, sprinkling the remainder of the charcoal on the surface.

(Port.; not in the other Pharmacopœias.)

CHARCOAL BISCUITS, each containing 10 grains.

CHARCOAL CAPSULES of gelatine, each containing 4 grains, are also in use.

CHARCOAL CAUTERY, Getchell's. Charcoal, 21; Nitre, 1; Powder of Acacia, 3; Water to make a paste and form sticks about 2 inches long, and thick as the little finger, but rounded at the point, and then dried.

Not Official.

CARBONEI BISULPHIDUM, U.S.

A colourless, highly-refractive liquid, with a characteristic odour. It is very inflammable.

Solubility.—1 in 300 of Water, readily soluble in Alcohol, Ether, Chloroform, the fixed and volatile Oils.

It is a good solvent for Iodine, Phosphorus, Precipitated Sulphur, etc.

Sp. g. 1·272. It should not affect the colour of blue Litmus paper moistened with Water (absence of Sulphurous Acid). When evaporated spontaneously, it should leave no residue (Sulphur). It should not blacken Solution of Acetate of Lead (absence of Hydrosulphuric Acid).

(Belg., Fr., Port., Russ., Span., Swiss and U.S.)

Medicinal Properties.—Antiseptic. Dr. Turnbull used it as an application to enlarged lymphatic glands, also the vapour to the ear in deafness, applied on a sponge or absorbent wool in a wide-mouthed bottle.

Dose.—Two ounces of a saturated Solution in Water, mixed with Milk or Syrup have been given in typhoid fever.—*L.* '89, i. 596.

One or two ounces daily of a saturated Solution in Peppermint Water have been given as a substitute for Bergeon's treatment of phthisis.—*B.M.J.* '88, i. 421.

CARDAMOMI SEMINA.

CARDAMOMS.

The dried ripe seeds of the Malabar Cardamom, *Elettaria cardamomum*, best kept in their pericarps, which are to be removed and rejected when the seeds are employed. Cultivated on the Malabar coast.

The ash was determined of Pericarps, Seeds, and Pulvis Cardamomi: Pericarps (three samples) yielded 10·4, 12·0, 13·4 p. c.; Seeds (three samples), 2·38, 2·81, 3·85 p. c.; Pulvis (three samples), 7·56, 6·33, 9·93 p. c.; these results seem to indicate that the Pulvis Cardamomi was not obtained from the seeds only, as directed in the Pharmacopœia.

(Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Norw., Port., Russ., Span., Swed., Swiss, and U.S.)

Medicinal Properties.—Stomachic and carminative; less heating and stimulating than some others. A useful adjuvant to purgatives to prevent griping.

Dose.—Of the seeds powdered, 5 to 20 grs.

1 of fruit yields ¾ of seeds.

Contained in Extractum Colocynthidis Compositum, Pulvis Cinnamomi Compositus, Pulvis Cretæ Aromaticus, Tinctura Gentianæ Composita, Tinctura Rhei, and Vinum Aloes.

Preparation.

TINCTURA CARDAMOMI COMPOSITA.

Cardamom seeds, freed from their pericarps, bruised, 1 oz.; Caraway fruit, bruised, 1 oz.; Raisins, freed from seeds, 8 oz.; Cinnamon Bark, bruised, 2 oz.; Cochineal, in powder, 220 grains; Proof Spirit, 80 oz.: macerate forty-eight hours with ¾ of the spirit, agitating occasionally, pack in a percolator, and let it drain, pour upon it the remainder of the spirit, and when it ceases to drop, press the marc, filter, and add sufficient Proof Spirit to make 80 oz. =(1 in 80).

NOTE.—If the above B. P. instructions are followed the product will be more than 80 oz., without making up.

The quantity of Cochineal has been slightly reduced.

Dose.—½ to 2 drms.

(Swiss resembles Brit., 1 in 100; U.S., 1 in 50, contains Glycerine, and is made with the *fruit* of the Cardamoms; not in the others.)

Contained in Decoctum Aloes Compositum, Mistura Ferri Aromatica, Mistura Sennæ Composita, Tinctura Chloroformi Composita.

Not Official.

OLEUM CARDAMOMI.—A pale aromatic oil distilled from Cardamom Seeds, which contain about 4 p.c. Sp. g. ·900—·940.

TINCTURA CARDAMOMI.—Cardamom Seeds, bruised, 1; sufficient Proof Spirit to percolate 10.

Dose.—30 to 60 minims.

(Port. and Swiss, 1 and 5; U.S., 15 in 100; not in the others.)

TINCTURA CARMINATIVA (*B.P.C.*).—Cardamom Seeds, bruised, 600 grains; Stronger Tincture of Ginger, 1¼ fluid ounces; Oil of Cinnamon, 100 mins.; Oil of Caraway, 100 mins.; Oil of Cloves, 100 mins.; Rectified Spirit sufficient to produce 20 oz.: macerate the Cardamoms in 15 ozs. of the Spirit for a week, decant, express, and dissolve the oils in the mixed tinctures and add Rectified Spirit to make 20 ozs.

Dose.—2 to 10 minims. Introduced as a flavouring agent.

By replacing the 600 grains of Cardamom Seeds by 24 minims of Oil of Cardamoms the maceration is avoided.

Not Official.

CARNIS EXTRACTUM.

EXTRACT OF MEAT.

Has an agreeable odour, grateful flavour, and is freely soluble in water.

Liebig says, "Vegetable Albuminates contained in bread, peas, beans, and potatoes are identical with Albuminates contained in the flesh of animals; and when these are added to extract of meat, they impart to it the peculiar nutritive value which distinguishes meat in our estimation from other food."

CARUI FRUCTUS.

CARAWAY FRUIT.

The dried fruit of *Carum carui.* Cultivated in England and Germany. The biennial herb flowers in the second year, and the fruit ripens in July or August. Yields from 3 to 6 per cent. of Oil.

The ash was determined from three samples of Seeds and three samples of Pulvis Carui: Seeds, 6·68, 5·72, 7·16 p. c.; Pulvis, 5·87, 6·51, 7·05 p. c.

(Austr., Belg., Dan., Fr., Ger., Norw., Port. (Alcaravie), Russ., Span. (Alcarabea), Swed., and U.S.; not in Dutch, Hung. or Swiss.)

Medicinal Properties.—Aromatic, stomachic, and carminative. Used occasionally in flatulent colic, and as an adjuvant to other medicines.

Used in the preparation of Conf. Opii, Conf. Piperis, Pulv. Opii Comp., Tinct. Cardamomi Comp., and Tinctura Sennæ.

Preparations.

AQUA CARUI.

Caraway Fruit, bruised, 1; Water, 20: distil 10. =(1 in 10).

Dose.—1 to 2 oz.

(Russ., made with oil; Swed., same as Brit.; not in the others.)

OLEUM CARUI.

The Oil distilled in Britain.

Sp. g. (several samples examined), ·909 to ·914.

Added to purgative medicines to prevent griping.

Dose.—1 to 4 minims.

(Austr., Ger., Port., Swiss, and U.S.; Fr., Huile Volatilo de Carvi; Dan., Norw. and Swed., Aetheroleum Carvi; Russ., sp. g. ·900—·960.)

Used in the preparation of Confectio Scammonii and Pilula Aloes Barbadensis.

CARYOPHYLLUM.

CLOVE.

The dried flower-bud of *Eugenia caryophyllata.*

Cultivated in Penang, Bencoolen, and Amboyna.

The ash was determined from three samples of Cloves and three samples of Pulvis Caryophylli: Cloves yielded, 4·78, 4·82, 5·11 p. c.; Pulvis, 6·97, 6·97, 6·13 p. c.

Test.—They emit, when indented with the nail, an oil of a strong fragrant odour.

(Austr., Belg., Dan., Fr. (Girofles), Ger., Hung., Norw., Port. (Cravinho), Russ., Span. (Clavo), Swed., Swiss and U.S.; not in Dutch.)

Medicinal Properties.—Stimulant, aromatic, and carminative; sometimes administered in substance or infusion to correct nausea, vomiting, and flatulency, and to promote digestion. But chiefly used to qualify other medicines.

The powder used in Infus. Aurantii. Co., Mist. Ferri Aromatica, and Vin. Opii.

Dose.—5 to 10 grs.

Preparations.

INFUSUM CARYOPHYLLI.

Cloves, bruised, 1; boiling Distilled Water, 40: infuse half an hour, and strain. =(1 in 40).

Dose.—1 to 2 oz.

(Not in the other Pharmacopœias.)

Incompatibles.—Lime Water, Salts of Iron, Mineral Acids, Gelatine.

OLEUM CARYOPHYLLI.

The Oil distilled in Britain. Colourless or pale yellow when recently distilled, but becomes reddish-brown by keeping.

Sp. g. (several examples examined) 1·041 to 1·063; the majority were over 1·055. Schimmel states the sp. g. of a genuine Oil never falls below 1·060.

Solubility.—1 in 60 of Proof Spirit; in all proportions of Rectified Spirit, Ether, and Strong Acetic Acid.

Used as an adjunct to purgatives; or applied to carious teeth.

Dose.—1 to 4 minims.

(Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Norw., Port., Russ., Span., Swed., Swiss and U.S.)

Contained in Confect. Scammonii, Pil. Colocynth. Co., Pil. Coloc. et Hyoscyami.

CASCARA SAGRADA. *See* RHAMNI PURSHIANI CORTEX.

CASCARILLÆ CORTEX.

CASCARILLA BARK.

The Bark of *Croton Eluteria*, from the Bahamas.

It may contain from ½ to 2 per cent. of an aromatic oil. It gives off a fragrant odour when burnt.

(Austr., Belg., Dan., Dutch, Fr., Ger., Norw., Port., Russ., Swed., Swiss, and U.S.; not in Hung. and Span.)

Medicinal Properties.—Aromatic, stomachic, and tonic. Used in dyspepsia, chronic diarrhœa, dysentery, and in recovery from acute diseases. Formerly used in intermittent fevers, but now almost entirely superseded by Cinchona for that purpose.

Dose.—In powder 10 to 30 grains.

Preparations.

INFUSUM CASCARILLÆ.

Cascarilla Bark, in No. 20 powder, 1; boiling Distilled Water, 10: infuse half an hour, and strain. =(1 in 10).

The time has been reduced from one hour to half-an-hour.

Dose.—1 to 2 oz.

(Not in the other Pharmacopœias.)

Incompatibles.—Lime Water and Metallic Salts.

This infusion quickly changes, and will scarcely keep good for a day in summer, but when it is prescribed with an aromatic Tincture keeps good.

2 oz. of Infusion is of about the same strength as ½ oz. of Tincture.

TINCTURA CASCARILLÆ.

Cascarilla Bark in No. 40 powder, 1; Proof Spirit, 8; macerate forty-eight hours with 6 of the spirit, agitating occasionally; pack in a percolator, let it drain, and pour on the remainder of the spirit, and when it ceases to drop, press the marc, filter, and add Proof Spirit to make 8. =(1 in 8).

Dose.—½ to 2 drms.

(Austr., 1 in 10; Belg., Dan., Fr., Norw., Russ., and Swed., 1 and 5; not in the others.)

This tincture is frequently prescribed with the diluted mineral acids, and then the resin is separated, which fills the mixture with minute floccules; it is therefore better, when giving acids, to prescribe the infusion.

CASSIÆ PULPA.

CASSIA PULP.

The pulp obtained from the recently imported pods of the Purging Cassia, *Cassia fistula.*

Imported from the East or West Indies.

Viscid, blackish-brown, with a sweet taste.

When obtained separately, the pulp frequently contains the seeds and the partitions or dissepiments; these should be removed when it is used for pharmaceutical purposes.—*Brit. Pharm.*

(Austr., Fruit and Pulp; Belg., Fruit and Extract; Fr., Pulpe de Casse, also Extrait de Casse; Port., Span., and U.S., Fruit; Swiss, Pulp; not in the others.)

Medicinal Properties.—Laxative. Useful in small doses for habitual costiveness. Large doses occasion nausea, flatulence, and griping; generally given in combination.

Dose.—As a laxative, 60 to 120 grs.; as a purgative, 1 to 2 oz.

Contained in Confectio Sennæ; 1 part in 8 nearly.

Not Official.

CASTOREUM.

The dried preputial follicles and their secretion, obtained from the Beaver, *Castor fiber*, the oil sacs being rejected.

Russian Castor contains 4·5 p.c. and Canadian 2 p.c. of Castorin. The tincture forms with water a milky liquid which on the addition of Ammonia becomes clear when made with Russian Castor, but remains cloudy when made with Canadian (Hager).

(In all the Pharmacopœias except U.S.)

Medicinal Properties.—Moderately stimulant and antispasmodic; occasionally used in hysteria.

Dose.—Of the powder 5 to 10 grs.

Preparation.

TINCTURA CASTOREI.—Castor, in coarse powder, 1; Rectified Spirit, 20: macerate seven days, agitating occasionally, strain, press, and add sufficient Rectified Spirit to make 20. = (1 in 20).

Dose.—½ to 1 drm.

(Austr., Dan., Hung., Norw., Port., Swed. and Swiss, 1 and 5; Dutch, 1 and 8; Belg., Fr., Ger. and Russ., 1 and 10; Span., 1 in 25; all by weight. Not in U.S.)

CATAPLASMATA.

The Cataplasms were contained in the London Pharmacopœia only, and are adopted by the Brit. Ph. with very slight modification. The formulas will be found under the names of the substances from which they are prepared.

CATAPLASMA CARBONIS, 1 in 28.
CATAPLASMA CONII, about 1 juice in 14.
CATAPLASMA FERMENTI. *See* Cerevisiæ, about 1 in 4.
CATAPLASMA LINI, 1 meal in 3½.
CATAPLASMA SINAPIS, about 1 powder in 5.
CATAPLASMA SODÆ CHLORINATÆ, 1 solution in 7.

Cataplasms that are not official are enumerated in the index.

CATECHU.

CATECHU.

Syn. Catechu Pallidum.

An extract of the leaves and young shoots of *Uncaria Gambier*.

Prepared in Singapore and in other places in the Eastern Archipelago.

It generally occurs in cubical reddish-brown pieces, also in square sticks, porous, bitter and astringent in taste.

Solubility.—Almost entirely soluble in boiling Water; the solution, when cold, is not rendered blue by Iodine. 75 per cent. is soluble in Rectified Spirit. Of 100 parts, only 50 to 60 are dissolved by cold Water, and the solution is bright. 30 parts of Isinglass precipitate the whole of the astringent matter.

The pale Catechu being already in the Edin., the Brit. 1864 retained it with the Black; but the black is the one adopted by other Pharmacopœias, and is preferred in the arts and manufactures; it is well known to be far superior to the pale in astringency, and always to be had of good quality; it is therefore a matter of surprise and regret that it has been rejected from the British Pharmacopœia.

(Ger.; Port., Cato; not in the others.)

Medicinal Properties.—A powerful astringent. Used chiefly in diarrhœa and some forms of atonic dyspepsia accompanied with pyrosis; also as a remote astringent for hæmorrhage and mucous discharges. Lozenges are the best medium for administering it in relaxed conditions of the uvula.

Dose.—10 to 30 grs. in powder.

Incompatibles.—The Alkalies, Metallic Salts, and Gelatine.

Preparations.

INFUSUM CATECHU.

Catechu, in coarse powder, 160 grs.; Cinnamon Bark, bruised, 30 grs.; boiling Distilled Water, 10 oz.: infuse half an hour, and strain. =(about 1 in 27).

Dose.—1 to 2 oz.

(Not in the other Pharmacopœias.)

PULVIS CATECHU COMPOSITUS.

Catechu, 4; Kino, 2; Rhatany Root, 2; Cinnamon Bark, 1; Nutmeg, 1: all in powder; mix. =(1 in 2½).

Keep it in a stoppered bottle.

Dose.—20 to 40 grains. Aromatic, astringent.

(Not in the other Pharmacopœias.)

TINCTURA CATECHU.

Catechu, in coarse powder, 2½; Cinnamon Bark, bruised, 1; Proof Spirit, 20: macerate for seven days with agitation, strain, press, filter, and add Proof Spirit to make 20. =(1 in 8).

Dose.—½ to 2 drms., or for a child 5 to 10 mins.

(U.S. (Tinct. Catechu Co.), 12 in 100; Austr., Belg., Fr. (Tinct. Cachou), Dutch, Ger., Port., Russ., and Swiss, 1 and 5; all by weight and with **Black Catechu.** Not in the others.)

TROCHISCI CATECHU.

Lozenges made with Catechu, Sugar, and Gum Acacia.

Each lozenge contains 1 grain of Catechu.

Dose.—1 to 6 lozenges.

(U.S., 1 gr. Black Catechu in each; Belg. (Tabella) 3 grs. in each; Dutch, about 1½ grs. in each; not in the others.)

Not Official.

CATECHU NIGRUM.—Black Catechu, Pegu Catechu, Cutch.—An extract from the heart wood of Acacia Catechu, dried and imported from Pegu. It generally occurs in irregularly shaped blackish-brown masses, astringent, and bitter in taste.

Solubility.—Of 100 parts, only 88 are dissolved by cold water, the solution being very turbid. 60 parts of Isinglass precipitate the whole of the astringent matter.

Dose.—5 to 15 grs.

(Austr., Belg., Dutch, Fr. (Cachou), Ger., Port. (Cato), Russ., Span., Swiss and U.S.; not in the others.)

⁂ As **GUMMI RUBRUM** is advantageously used as a substitute for Catechu, it may be proper to mention it here, but it will be found in its alphabetical order with its preparations.

CERA ALBA.

WHITE WAX.

Yellow Wax, bleached by exposure to moisture, air, and light. Hard, nearly white, translucent.

Test.—Should respond to the tests given under Cera Flava.

Melting points of three samples were determined by the process given under Cera Flava, 140°, 140°, 142° F.

Solubility.—Entirely in Oil of Turpentine, insoluble in Rectified Spirit; slightly, and not uniformly, soluble in (cold) Ether; about 1 in 100 of boiling Rectified Spirit; 1 in 10 of boiling Ether.

This wax has been much used in ointments, but the Author has observed that the ointments made with it grow rancid, and when the yellow wax is used the ointment keeps a long time without rancidity.

(Austr., Belg., Dan., Fr., Ger., Hung., Norw., Port. (Cera branca), Russ., Span., Swed., Swiss and U.S.; not in Dutch.)

Medicinal Properties.—Emollient; chiefly employed as an ingredient in Ointments.

Contained in Unguenta Cetacei, and Simplex; also in Charta Epispastica.

Preparation.

UNGUENTUM SIMPLEX.

White Wax, 2; Benzoated Lard, 3; Almond Oil, 3: melt together, and stir till it becomes solid. This is necessary, because the Ointment is apt to granulate if the stirring is not continued until it solidifies. =(1 in 4).

Benzoated Lard now used in the place of Lard.

(Austr. and Hung., Lard 8, White Wax 2; Belg., Lard 17, White Wax 3; Dutch, Yellow Wax 3, Olive Oil 7; Swiss, White Wax 1, Lard 6; U.S. Lard 8, Yellow Wax 2; Fr. (Cérat Simple), Oil of Almonds 6, White Wax 2; Ger. (Unguentum Cereum), Olive Oil 7, Yellow Wax 3; Port. (Ceroto Simples), White Wax 3, Almond Oil 7; Span. (Cerato Simple), White Wax 1, Almond Oil 3; Swed. (Ceratum Album), White Wax 1, Spermaceti 1, Benzoated Lard 3, also (Ceratum Flavum) Yellow Wax 1, Olive Oil, 2; Dan. and Norw. (Ung. Cerae), and Russ. (Ung. Cereum), Olive Oil 6, Yellow Wax 2.)

Used in the preparation of the following Unguenta:—Antimonii Tartarati, Creasoti, Elemi, Hydrargyri Ammoniati, Hydrargyri Iodidi Rubri, Plumbi Carbonatis, Plumbi Iodidi, Resinæ.

Not Official.

COLD CREAM.—White Wax, 1; Spermaceti, 1; Oil of Almonds, 8; Rose Water, 11; Otto of Rose to perfume it. Melt together, by means of a water-bath, the oil, spermaceti, and wax, then gradually add the rose water, previously warmed to the same temperature, and stir till it is of proper consistence to pour into pots without separating.

CERA FLAVA.

YELLOW WAX.

The prepared honeycomb of the Hive-Bee, *Apis Mellifica.*

When quite fresh, is of a golden yellow, but on keeping gets brown.

Sp. g. 0·950 to 0·970.

Solubility.—The same as Cera Alba.

Tests.—Should be readily and entirely soluble in hot Oil of Turpentine. Should not yield more than 3 per cent. to cold Rectified Spirit, and nothing to Water or to a boiling solution of Soda, the two latter fluids after filtration neither being turbid nor yielding a precipitate on the addition of Hydrochloric Acid. (Absence of Soap, Fats, Japan

Wax, and Resin.) Melts at 146° F. (63°·3 C.) when tested as follows. Liquefy a few grains and draw a little of the fluid up into a capillary tube; fix a piece of the capillary tube to the bulb of a thermometer by thread; immerse the bulb and tube in a beakor of water and heat the latter gently; at the moment the opaque rod of wax becomes transparent note the temperature. The solidifying point is 2° or 3° lower than the melting point.

Melting point of ten samples taken, with results as follows:—
143°·5, 142°·5, 143°·5, 143°·5, 143°, 142°·5, 144°, 143°·5, 143°·5, 145° F.

(Austr., Belg., Dan., Dutch, Fr. (Cire Jaune), Ger., Hung., Norw., Port. (Cera Amarella), Russ., Span., Swed., Swiss and U.S.)

Medicinal Properties.—Chiefly used in medicine as an ingredient of plasters and ointments, and is preferable to White Wax for the purpose, the ointments keeping a long time without becoming rancid.

Contained in several of the Emplastra and Unguenta, and in Pilula Phosphori.

CEREVISIÆ FERMENTUM.

BEER YEAST.

The ferment obtained in brewing beer, and produced by *Saccharomyces cerevisiæ*; viscid, semi-fluid, frothy, and consists of numerous microscopic round or oval cells.

Insoluble in Alcohol or Water.

(Span., Levadura de Cerveza; not in the others.)

Medicinal Properties.—Antiseptic and stimulant; has been recommended internally as a prophylactic against boils and carbuncles. It has been found useful in obstinate dysentery.

Dose.—(Fresh) ½ to 1 oz. every two hours, alone or with water.

Preparation.

CATAPLASMA FERMENTI.

Beer Yeast, 6; Wheaten Flour, 14; Water, 100° F. (37·8° C.), 6: mix. Place the mass near the fire till it rises.

Useful in foul and sloughing ulcers.

(Not in the other Pharmacopœias.)

CERII OXALAS.

OXALATE OF CERIUM.

$Ce_2 3C_2O_4, 9H_2O$, eq. 708.

A white insoluble powder. Introduced into practice by Sir James Simpson, of Edinburgh. Cerium was discovered in 1803, and is obtained chiefly from a mineral called Cerite, which also contains Lanthanum and Didymium.

Tests.—10 grs. when incinerated lose 5·2 grs. in weight; the ash dissolves completely and without effervescenco in boiling Hydrochloric Acid (absence of Carbonates), and the resulting solution gives with solution of Sulphate of Potassium a white crystalline precipitato (Sulphate of Cerium and Potassium). If the salt be boiled with solution of Potash and filtered, the filtrate is not affected by solution of Chloride of Ammonium (absence of Alumina), but when supersaturated with Acetic Acid it gives with Chloride of Calcium a white precipitate (Oxalate of Calcium), which is soluble in Hydrochloric Acid.

(Dutch, Oxalas Cerosus; Port. (Oxalato de Cerio); Swed., Oxalas Cerosus Venalis, and U.S.; not in the others.)

Medicinal Properties.—Sedative, tonic. Of great value in chronic vomiting, and vomiting during pregnancy; also in dyspepsia, gastrodynia, and pyrosis. It has been strongly recommended in sea-sickness, in doses of 10 to 20 grains every three hours. Given with success in spasmodic cough, and the cough of phthisis, and in convulsive diseases, as chorea and epilepsy, it does not produce the discoloration of the skin, as does the use of Nitrate of Silver.

(Brit. Pharm. **Dose** 1 to 2 grains.)

It is taken in 5 to 15 grain doses as a powder mixed with a little water.

It can be safely administered in 10-grain doses 3 times a day for many days in succession, the only unpleasant symptom when so used was slight dryness of mouth, that appeared after several days. It was most efficacious in the treatment of chronic cough, and the initial dose should be 5 grains. It did not disturb the stomach; on the contrary, relieved nausea and improved digestion. (Conclusions arrived at by the Committee of the New York Therapeutical Society on April 9, 1880, *New York Medical Record*, May 1, 1880.)

CETACEUM.

SPERMACETI.

A white concrete fatty substance obtained, mixed with Oil, from the head of *Physeter macrocephalus*, or Sperm Whale, inhabiting the Pacific and Indian Oceans.

Nearly pure Cetine, separated by cooling, filtration, and pressure from the oil, and afterwards purified.

Cetine or Palmitate of Cetyl, when saponified yields Ethal (the Hydrate of Cetyl) and not Glycerine (the Hydrate of Glyceryl). Most Oils and Fats are Oleates, Palmitates, and Stearates of Glyceryl, which when saponified yield Glycerine and Oleates, Palmitates and Stearates of the metals.

Solubility.—Slightly in Rectified Spirit; 1 in 1 of boiling Rectified Spirit; 1 in 6 of Ether; 1 in 1 of boiling Ether; 4 in 5 of Chloroform. Can be reduced to powder by the addition of Rectified Spirit.

Tests.—Scarcely unctuous to the touch; melting point 111° to 122° F. (43°·9 to 50° C.), when tested by the method described under Cera Flava. Melting point of three samples were taken, all three 113° F.

(In all the Pharmacopœias; Fr. Blanc de Baleine; Span., Esperma de Ballena.)

Medicinal Properties.—Emollient and demulcent. Has been given in wasting diseases as a substitute for Cod Liver Oil. Externally it is much employed for ointments and cerates.

Dose.—20 to 60 grs. boiled in milk, two or three times daily.

Contained in Charta Epispastica.

Preparations.

UNGUENTUM CETACEI.

Spermaceti, 5; White Wax, 2; Almond Oil, 20; Benzoin, ½: melt the first three together, add the Benzoin, continue the heat for two hours, frequently stirring the mixture, then strain and stir till cold.

Benzoin is now added, but it converts this emollient preparation into one which is irritating: see below.

The Author found 17 of Oil sufficient in summer.

The following are called **Unguentum Cetacei**:—

Dan. Spermaceti 3, White Wax 1, Oil of Almonds 24, Rose Water 12.
Norw. Spermaceti 1, White Wax 1, Oil of Almonds 10, Rose Water 8.
Russ. Spermaceti 3, White Wax 3, Olive Oil 14, Rose Water 2.
Swed. Spermaceti 5, White Wax 4, Oil of Almonds 36, Rose Water 16.
Swiss, Spermaceti 15, White Wax 12, Oil of Almonds 50.

The following are called **Ceratum Cetacei**:—

Austr. Spermaceti, White Wax, Oil of Almonds, equal parts
Hung. Spermaceti 8, White Wax 8, Lard 9.
Port. Spermaceti 1, White Wax 1, Oil of Almonds 3.
Span. Spermaceti 3, White Wax 2, Oil of Almonds 16, Rose Water 10.
U.S. Spermaceti 2, White Wax 7, Olive Oil 11.
Dutch. **Unguentum Leniens.**—Spermaceti 10, Yellow Wax 5, Olive Oil 60, Water 25, Otto of Rose 1.

(All by weight. Not in Belg., Dutch, Fr., or Ger.)

Not Official.

MISTURA CETACEI.—Spermaceti, 60 grs.; Proof Spirit, 15 minims: finely pulverize the Spermaceti by aid of the spirit, and add by degrees half the yolk of an egg, at first only sufficient to make a stiff paste, which should be made very smooth by diligent trituration, then add the rest, and make up with water to 4 ounces.

Dose.—1½ oz. Formerly given for coughs and irritation of the bronchial mucous membrane. It was once a constant prescription immediately after delivery.

UNGUENTUM CETACEI SINE BENZOINO.—Spermaceti, 5; White Wax, 2; Almond Oil, 18: M.S.A.

The B.P. ointment is unsuited for many purposes for which this ointment is useful, such as **eye** ointments, ointment for Piles, &c.

Used as a cool dressing. Applied on lint to broken blisters from walking, it affords great relief, and frequently enables persons to continue the exercise without serious discomfort. It is also recommended for smearing on the feet before starting for a long walk on rough ground.

CETRARIA.

ICELAND MOSS.

The dried lichen, *Cetraria Islandica.*

It is a native of the north of Europe.

Almost odourless when dry, but when moistened with water has a feeble seaweed-like odour. Taste mucilaginous and bitter. A strong decoction gelatinises on cooling.

It should be freed from pine leaves, mosses, and other lichens, which are frequently found mixed with it.—*U.S.P.*

(Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Norw., Port., Russ., Span., Swed., Swiss and U.S., *Lichen Islandicus.*)

Medicinal Properties.—Demulcent, nutritious, and slightly tonic.

Preparation.

DECOCTUM CETRARIÆ.

Iceland Moss, 1: first wash with cold water, then add Distilled Water, 20; boil ten minutes, strain whilst hot and wash the marc to make 20. =(1 in 20).

Dose.—1 to 4 oz.

(U.S., 1 in 20; Belg., 1 in 25; Dutch, 6 in 100; Fr. (Tisane) 1 in 100; Russ., 1 in 32; Span., 1 in 67; not in the others.)

Not Official.

SACCHARUM CETRARIÆ.—Iceland Moss 1, Sugar 1, Water 100. Wash the Iceland Moss with water to remove the bitterness, then boil with 100 of Water, strain and express lightly, and in the strained liquid dissolve the Sugar and evaporate on a water-bath. When sufficiently firm remove from the bath and dry in a cupboard to a powder or scale.

GELATINA CETRARIÆ.—Saccharated Cetraria 2, Sugar 1, Water 5. Mix, boil gently till scum collects on the surface, then withdraw the heat, remove the scum, and pour into pots to cool.

(A similar preparation is given in Austr., Belg., Fr., Ger., Norw., Port., Russ., Span., Swed., and Swiss.)

PASTILLUS CETRARIÆ.—Iceland Moss jujubes. Emollient.

Not Official.

CARRAGEEN.

Syn. Irish Moss.

The dried *Chondrus crispus.*

Is used as an article of food on the west coast of Ireland, where it abounds. Has been proposed as a substitute for Acacia as an emulsifying agent and for the suspension of some powders.

(Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Norw., Port., Russ., Span., Swed., Swiss and U.S.)

SACCHARUM CARRAGEEN.—Made like Saccharum Cetrariæ.

GELATINA CARRAGEEN.—Made like Gelatina Cetrariæ.

(A similar preparation is given in the Austr., Belg., Fr., Ger., Norw., Port., Russ., and Swed.)

CHARTÆ.

CHARTA EPISPASTICA. *See* Cantharides.
CHARTA NITRATA. Ger. *See* Potassii Nitras.
CHARTA SINAPIS. *See* Sinapis.

Not Official.

CHAULMOOGRA OIL.

See Gynocardiæ Oleum.

Not Official.

CHINOLIN.

Obtained synthetically from Anilin, Nitro-benzene, Glycerine, and Sulphuric Acid.

A colourless mobile liquid, unchanged at —20° C. It becomes red on keeping. Sp. g. 1·081. It has a penetrating odour resembling that of Phosphorus and Essential Oil of Almonds.

Of a commercial sample examined, the final two-thirds distilled about 454° F. (234·4° C.).

Solubility.—1 in 220 of Water; it mixes in all proportions with Alcohol, Chloroform, Ether, and Oils.

Medicinal Properties.—Antiseptic and antipyretic.

Preparation.

CHINOLIN TARTRATE.—Colourless prisms.

Solubility.—1 in 42 of Water, 1 in 70 of Rectified Spirit.

Dose.—5 to 10 grains.

CHIRATA.

CHIRETTA.

The entire plant dried, *Ophelia chirata* (annual), collected in Northern India when the fruit begins to form.

(Port. and U.S.; not in the others.)

Medicinal Properties.—The same as Gentian, but is a purer bitter, without aroma or astringency; given in dyspepsia of gouty subjects.

Preparations.

INFUSUM CHIRATÆ.

Chiretta, cut small, 1; Distilled Water at 120° F. (48°·9 C.), 40; infuse half an hour and strain. =(1 in 40).

Dose.—1 to 2 oz.

(Not in the other Pharmacopœias.)

Salts of Iron may be given in this infusion when a strong bitter is desired as a vehicle.

TINCTURA CHIRATÆ.

Chiretta, cut small and bruised, 1; Proof Spirit, 8; macerate forty-eight hours with 6 of the spirit, agitating occasionally, pack in a percolator and let it drain, then pour on the remaining spirit; when it ceases to drop, press the marc, filter, and add Proof Spirit to make 8. =(1 in 8).

Prescribed in 5 minim doses, with acids and tincture of orange to form an acid tonic mixture.

Brit. Ph. dose ½ to 2 drms.

(U.S., 1 in 10; not in the other Pharmacopœias.)

CHLORAL HYDRAS.

HYDRATE OF CHLORAL.

$C_2HCl_3O.H_2O$, eq. 165·5.

Chloral, produced by the action of dry chlorine gas on anhydrous alcohol, purified by treatment, first with sulphuric acid and afterwards with a small quantity of lime, and finally converted into the solid hydrate by the addition of water.

Solubility.—4 in 1 of Water; 5 in 1 of Rectified Spirit; 2 in 1 of Ether; 2 in 1 of Glycerine; 1 in 1 of Olive Oil; 1 in 3 of Chloroform; 1 in 10 of Oil of Turpentine (cold), 1 in 5 boiling; 1 in 68 of Bisulphide of Carbon.

In colourless crystals, which do not deliquesce on exposure to air. It has a characteristic odour and taste.

Tests.—On the application of a gentle heat it fuses to a colourless transparent liquid, which, as it cools, begins to solidify at a temperature of about 120° F. (48° 9 C.). It boils in a test-tube, with pieces of broken glass immersed in it, at 202° to 206° F. (94°·4 to 96°·7 C.), and at a slightly higher temperature it volatilizes on platinum foil without residue. The aqueous solution is neutral or but slightly acid to test-paper. A solution in chloroform, when mixed by agitation with sulphuric acid, does not impart colour to the acid. 100 grains of hydrate of chloral dissolved in an ounce of distilled water and mixed with 30 grains of slaked lime, submitted to careful distillation with a suitable apparatus, should yield not less than 70 grains of chloroform.

This last test is more conveniently conducted in a graduated tube, thus: Place in the tube 250 grain-measures of a 20 p.c. solution of Caustic Potash, and add to it gradually (keeping it cold), 50 grains of the Hydrate of Chloral; cork securely and shake: allow the liquids to separate, and the number of grain-measures of Chloroform (at the bottom), to which must be added 1 for every 200 grain-measures of supernatant liquid, multiplied by 1·5 gives the grains of Chloroform, which should be not less than 35.

A boiling point under 95° C. indicates under-hydration, and the sample is likely to decompose and become acid on keeping, whilst a boiling point above 98° C. indicates an over-hydrated and deliquescent sample. Best commercial specimens begin to boil at about 96·5° C., quickly rising to 97° C., and finally to 98° by the time half the liquid has passed over.—(Allen.)

(Austr., Ger., Hung. and Swiss, Chloralum Hydratum; Belg. and Dutch, Hydras Chlorali; Dan., Norw. and Swed., Hydras Chloralicus; Fr., Chloral Hydraté; Port., Hydrato de Chloral; Russ., Chloralum Hydratum Crystallisatum; Span., Hidrato de Cloral; U.S., Chloral.)

Medicinal Properties.—An excellent hypnotic, producing natural and placid sleep soon after its administration. Suitable for hypochondriacal affections, chorea, nervous disturbances, and restlessness, where opium and Indian hemp disagree. Good also in asthma and whooping cough. As a hypnotic in fevers, it also diminishes the temperature of the body. Has been found useful in idiopathic tetanus in doses 30 to 60 grains (*L.* '70, ii. 920); also 22 grains every three hours (*L.* '89, i. 1152); also 10 to 20 grains with 20 to 30 grains of Bromide of Potassium (*L.* '87, i. 264).

Of great value in labour, as it relieves the pain without lessening the expulsive power of the uterus. Internally, in the early stages of diphtheria, to remove false membranes (*L.M.R.* '82, 270, and *B.M.J.* '88, i. 1083); also locally, dissolved in Glycerine. Has been recommended in nocturnal incontinence of urine; and children bear it well (R.).

Also in delirium tremens.—*B.M.J.* '70, ii. 62.

As an anodyne it is inferior to Opium, but forms a good combination with it.

It is not suitable for subcutaneous injection, as it is likely to produce inflammation.

In concentrated solution, applied locally, it acts as a vesicant. It should not be given to a person with weak heart.

Effects from an overdose or repeated overdoses are cramp in the legs, swimming in the head, flushed face, closed eyes, with injected conjunctiva, and in some cases death.

Dose.—5 to 30 grains.

3 oz. will dissolve in 1 oz. of water, and measure 2 fluid ounces and 5½ drachms; if to this be added 23 minims of water, every minim will contain a grain of chloral.

This **solution** is handy for dispensing.

Incompatibles.—When prescribed with Alkali, Chloroform will be liberated.

Antidotes.—Stomach pump or emetics; keep up the temperature by hot blankets, hot water bottles, &c.; injection of a pint of hot strong coffee into rectum; electro-magnetism; inhalations of Nitrite of Amyl; in bad cases hypodermic injection $\frac{1}{25}$ gr. of Nitrate of Strychnia; artificial respiration.—(Murrell.)

$\frac{1}{20}$ of a grain of Picrotoxine has been found enough for 30 grains of Chloral.

Preparations.

SYRUPUS CHLORAL.

Hydrate of Chloral, 80 grains; Distilled Water, 1½ drm.; Syrup, to make 1 oz.; mix. =(1 gr. in 6 mins.).

Sp. g. about 1·320.

The former preparation contained more water and less syrup.

Dose.—½ to 2 drms.

(Belg. and Fr., 1 in 20, with Peppermint; Port., 1 in 50; Span., 1 in 25; Swiss, 1 in 11. Not in the others.)

Not Official.

SUPPOSITORIA CHLORAL.—Chloral Hydrate, 180 grs.; White Wax, 60 grs.; Oil of Theobroma, 60 grs.: melt together and pour into moulds.

CHLORAL CUM CAMPHORA (*B.P.C.*)—Chloral 1, Camphor 1. Rub together in a warm mortar until completely liquefied, and filter if necessary.

Useful application for the relief of neuralgia.

CHLORAL CUM CAMPHORA ET COCAINA.—Chloral 5, Camphor 5, Cocaine 1: mix.

For the relief of toothache from dental caries, applied on cotton wool.—*B.M.J.* '86, ii. 131.

CHLORAL ET PHENOL.—Chloral 1, Carbolic Acid 1: mix.

Is soluble in Water, Rectified Spirit, and Glycerine.

Not Official.

CHLORALAMID.

A compound of Chloral Anhydride and Formamide.

In colourless crystals. Its aqueous solution should not be heated above 120° F. It is permanent in weakly acidulated solutions, but decomposed by alkalies.

Solubility.—1 in 21 of Water; 1 in 2 of Rectified Spirit.

Medicinal Properties.—Introduced as a hypnotic. It is stated to have no influence on the pulse, respiration, or temperature.

Given in all kinds of insomnia.—*L.* '89, ii. 849; *B.M.J.* '89, ii. 1326; *M.P.* '89, ii. 571.

Dose.—20 to 45 grains in slightly acid solution.

It should not be prescribed with Alkalies, nor be treated with boiling Water, as either decompose it.

CHLORI LIQUOR.

SOLUTION OF CHLORINE.

Chlorine Gas dissolved in about half its volume of Water, and constituting about ·6 per cent. by weight of the solution.

A yellowish-green liquid, smelling strongly of Chlorine.

Hydrochloric Acid, 6; Black Oxide of Manganese, in fine powder, 1; Distilled Water, 34: put the manganese into a gas-bottle, pour on it the acid mixed with 2 of the water; apply a gentle heat, and pass the gas through a bottle containing 2 more of water into the remainder of the water contained in a large bottle, which is to be kept cold till the gas ceases to come over; the bottle should then be closed by the hand and shaken till the gas is absorbed. Keep it in a green glass bottle and in a cool place.

Tests.—Sp. g. 1·003. Evaporated, it leaves no residue. When 20 grains of Iodide of Potassium, dissolved in 1 ounce of distilled water, are added to 1 fluid ounce (439 grains by weight) of this preparation, the mixed solution acquires a deep red colour, which requires for its discharge 750 grain-measures of the volumetric solution of Hyposulphite of Sodium, corresponding to 2·66 grains of Chlorine. Test explained under Calx Chlorata.

(Aqua Chlori, Austr., Belg., ·32 p.c. of Chlorine, Hung. and U.S., ·4 p.c.; Ger., Aqua Chlorata (contains ·4 p.c. of Gas); Fr., Chloro Dissous ·68 p.c.; Solutio Chlori, Dan., Norw. and Swed., ·32 p.c. and Dutch, ·390 p.c.; Russ., Chlorum Solutum ·4 p.c.; Port., Soluto de Chloro; Span., Solucion de Cloro; Swiss, Liquor Chlori.)

Medicinal Properties.—Stimulant, antiseptic, and disinfectant. When diluted it is used as a **gargle** in small-pox, scarlatina, diphtheria, and putrid sore throat, and as a **wash** for ulcers, cancerous sores, buboes, and large abscesses. Dr. Scott, of India, gave it for biliary obstructions in conjunction with the Nitro-hydrochloric Acid baths.

Dose.—10 to 20 minims, in a wineglassful of water.

Incompatibles.—Salts of Lead and Silver.

Antidotes.—In case of poisoning by Chlorine Water, the antidotes are White of Egg, Milk, Flour.

VAPOR CHLORI. *See* CALX CHLORINATA.

Not Official.

LIQUOR CHLORI.—Chlorate of Potash, 30 grs.; Hydrochloric Acid, ½ oz.; Water to 1 oz.: mix.—*London Hospital.*

CHLOROFORMUM.

CHLOROFORM.

$CHCl_3$, eq. 119·5.

Syn. TERCHLORIDE OF FORMYL.

It is a colourless, limpid, and volatile liquid, obtained by distillation from a mixture of Chlorinated Lime, Slaked Lime, and weak Spirit, the heat being very carefully applied. Pure Chloroform will not burn, but its vapour colours a Bunsen flame a bright green.

Solubility.—10 in 7 of Rectified Spirit; in all proportions of Ether; freely in Olive Oil and Oil of Turpentine. In Water at 32° F. 1 in 150, at 60° F. 1 in 185, at 86° F. 1 in 210, at 113° F. 1 in 200, at 130° F. 1 in 192. Will not dissolve in Glycerine.

Chloroform acts on vulcanite, and dissolves Caoutchouc, Gutta-percha, Mastic, Elemi, Tolu, Benzoin, and Copal. Amber, Sandarac, Lac, and Wax are only partially soluble. It also dissolves Iodine, Bromine, most of the organic alkaloids, the fixed and volatile oils, most resins and fats. It dissolves Sulphur and Phosphorus sparingly.

Tests.—Sp. g. 1·497. On being shaken with Sulphuric Acid the latter should not be coloured. Dropped into water, it suddenly sinks and remains without opacity. It evaporates speedily, and leaves no residue and no unpleasant odour. Evolves no gas when Potassium is dropped into it.

NOTE.—Chloroform should not be prescribed with weak spirits or Glycerine, as it separates.

Mixed with strong spirits, Camphor Liniment, Soap Liniment, Olive Oil, or Oil of Turpentine, it dissolves perfectly, thus: Chloroform, Oil of Turpentine, of each 1, Soap Liniment 2, makes a clear liniment.

(Austr., sp. g. 1·485 to 1·500; Belg., sp. g. 1·491; Dan., Purum sp. g. 1·490 to 1·494; Fr., sp. g. 1·500; Dutch, Russ., and U.S. (Purificatum), sp. g. 1·485 to 1·490; Ger. and Hung., sp. g. 1·485 to 1·489; Norw. and Swed., sp. g. 1·485 to 1·493; Port. and Span., sp. g. 1·480; Swiss, sp. g. 1·492.)

Medicinal Properties.—Anæsthetic. Internally, a sedative, narcotic, and antispasmodic. The vapour is applied to the eye, and also to the rectum and vagina. Its chief use, however, is to produce anæsthesia by inhalation during surgical operations, and the quantity required for each inhalation must depend on the duration of the operation to be performed; but Ether is now considered safer, more particularly for persons with weak heart. With Camphor relieves toothache. Externally, applied immediately after the sting of a wasp, takes away the pain and prevents further mischief. A powerful auxiliary to the Liniments of Aconite, Belladonna, and Henbane.

Its vapour and aqueous solution are powerfully antiseptic. It preserves vegetable infusions and meat from decomposition.

Dose.—1 to 5 minims, with yolk of egg and mucilage, in syrup, or in a teaspoonful of brandy. *B.P. dose.*—3 to 10 minims.

Used in the preparation of Liquor Gutta Percha.

Antidotes.—In case of overdose of Chloroform, the antidotes are, fresh pure air and artificial respiration (*M.T.* '74, ii. 219), and Nitrite of Amyl (*L.* '75, i. 644).

Preparations.

AQUA CHLOROFORMI.

Chloroform, 1 drm.; Distilled Water, 25 oz.: dissolve by shaking.

Dose.—$\frac{1}{2}$ to 1 oz. =(1 in 200).

LINIMENTUM CHLOROFORMI.

Chloroform, 1; Liniment of Camphor, 1: mix. =(1 in 2).

The oil in the Camphor Liniment prevents the evaporation of the Chloroform. Stimulating on application to a tender skin.

(Fr., Chloroform 1, Almond Oil 9; Span., Chloroform 1, Compound Oil of Stramonium 9; Swiss, Chloroform 1, Olive Oil 4 (all by weight); U.S., Chloroform 4, Soap Liniment 6. Not in the other Pharmacopœias.)

SPIRITUS CHLOROFORMI.

Chloroform, 1; Rectified Spirit, 19: dissolve. =(1 in 20).

Formerly called Chloric Ether, and of various strengths.

Test.—Sp. g. ·871.

Dose.—10 to 60 minims. 10 or 20 minims are frequently prescribed to give sweetness to draughts, and to cover nauseous flavours.

(U.S., Chloroform 1, Alcohol 9; not in the other Pharmacopœias.)

TINCTURA CHLOROFORMI COMPOSITA.

Chloroform, 2; Rectified Spirit, 8; Compound Tincture of Cardamoms, 10: mix. =(1 in 10).

Dose.—20 to 60 minims.

The Chloroform will separate if this Tincture is prescribed in too little water. Has been given for sea-sickness.

TINCTURA CHLOROFORMI ET MORPHINÆ. *Syn.* LIQUOR CHLOROFORMI COMPOSITUS.

Chloroform, 2 oz.; Ether, $\frac{1}{2}$ oz.; Rectified Spirit, 2 oz.; Hydrochlorate of Morphine, 16 grs.; Diluted Hydrocyanic Acid, 1 oz.; Oil of Peppermint, 8 mins.; Liquid Extract of Liquorice, 2 oz.; Treacle, 2 oz.; Syrup to make 16 oz.: diffuse the Hydrochlorate of Morphine and Oil of Peppermint in the Spirit, and add the Chloroform and Ether. Mix the Liquid Extract of Liquorice and Treacle with 3 oz. of Syrup, add this to the previously formed solution, mix them thoroughly, add the Hydrocyanic Acid, and increase the volume to 16 oz. by a further addition of Syrup.

Dose.—5 to 10 minims.

(Hung., has a "Chlorodyne," but it differs considerably from the above; not in the others.)

This formula is obviously founded upon the one given in former editions of the "Companion," but it contains four times the quantity of Morphine.

Not Official.

CHLOROFORMUM CAMPHORATUM.—Camphor, 1; Chloroform, 2: dissolve.

A remedy for toothache, and topically applied for rheumatism.

Dose.—5 to 10 minims.

VAPOR CHLOROFORMI.—Chloroform, 15 minims for one inhalation.

TETRACHLORIDE OF CARBON, sp. g. 1·590. Has been used to produce anæsthesia; its action is said to be effective and pleasant to the patient.

A.C.E. MIXTURE.—Alcohol (sp. g. ·838), 1; Chloroform (sp. g. 1·497), 2; Ether sp. g. ·735), 3: mix.

Used as an anæsthetic in place of Chloroform.—*Med. Chir. Trans.* vol. 47, 1864, p. 341; *B.M.J.* '87, ii. 975, 1078, 1185, 1314, 1359.)

"**METHYLENE**" (formerly called Bichloride of Methylene).—Introduced by Dr. Richardson in November, 1867. It is a limpid dense fluid, sp. g. varies; when dropped into water about one-fourth of it is dissolved, the remainder separates like chloroform at the bottom of the vessel as a perfectly clear and distinct fluid, and the whole has a sweet pleasant odour, without the least smell of ether. It is now used in the larger operations.

Recommended as an anæsthetic in place of Chloroform.—*B.M.J.* '88, i. 1211. 1301; and '88, ii. 72, 203.

REGNAULD'S ANÆSTHETIC MIXTURE.—Chloroform 4; Methylic Alcohol 1: mix.

Used as an anæsthetic in the place of Chloroform.—*B.M.J.* '83, ii. 106; '84, i. 452.

CHRYSAROBINUM.

CHRYSAROBIN.

Syn. (for the crude) ARAROBA POWDER; GOA POWDER.

The medullary matter of the stem and branches of *Andira Araroba*, dried, powdered, and *purified;* containing more or less Chrysophanic Acid according to age and condition, and yielding much Chrysophanic Acid by oxidation. *As purified by solvents it is* a light brownish-yellow, minutely crystalline powder, tasteless and inodorous.

NOTE.—The words, "as purified by solvents it is," have been added since the publication of the Brit. Pharm. 1885, and it has since been further amended by the addition of the word "purified." Goa or Araroba Powder is now no longer official, although these names are retained as synonymous. The Ointment must now be made from Purified Araroba.

Purified Chrysarobin was introduced into medicine incorrectly as Chrysophanic Acid, and it is still known by this name, which, however, only correctly applies to the oxidised product.

(Austr., Araroba Depurata; Dutch, Ger., and U.S., Chrysarobinum, the purified product; not in the others.)

Medicinal Properties.—It has been found efficient in chronic psoriasis, but as it may cause erythema it requires watching. It stains the skin yellow, also the linen.

Preparation.

UNGUENTUM CHRYSAROBINI.

Chrysarobin, 20 grs.; Benzoated Lard, 480 grs.: melt the Lard, add the Chrysarobin, and stir them together, maintaining a moderate temperature (210° F. is sufficient) so as to promote solution; then remove the heat and stir till cold. =(1 in 25).

(U.S., 1 in 10; not in the others.)

Not Official.

UNGUENTUM ACIDI CHRYSOPHANICI (*B.S.H.*).—Purified Chrysarobin, 120 grs.; Lard, 1 oz.: heat till dissolved (about 300° F.), then stir till cold.

PIGMENTUM CHRYSAROBINI.—Chrysarobin 60 grs.; Chloroform 10 drms; pure Gutta Percha 60 grs.; dissolve. Painted on with a stiff brush. Acts effectually, and does not stain the linen.—*B.M.J.* '87, ii. 1139.

It has also been suggested to make Chrysarobin into a paste with water, apply this to the skin, and cover it with Collodion.—*M.T.* '82, i. 826.

CHRYSAROBIN PLASTER MULLS (Unna).—Contain $\frac{1}{10}$ grain to the square inch: also five times this strength.

ANTHRAROBIN.—A substitute for Chrysarobin. A reduction product from Alizarin. Slightly soluble in water, but readily in Rectified Spirit and Solution of Borax. For an ointment it is rubbed with Olive Oil and diluted with Lard.

Its action is similar to Chrysarobin, but it is slower and does not produce the same irritation. The part should be previously washed with Potash Soap, and the alcoholic **tincture** is preferred to the **ointment**. The strength used is 1 in 10.—*B.M.J.* '88, i. 1234; *L.M.R.* '88, 234, and '89, 243.

CIMICIFUGÆ RHIZOMA.

CIMICIFUGA.

Syn. Actææ Radix. Black Snake Root. Black Cohosh.

The dried rhizome and rootlets of *Cimicifuga racemosa.*

Although appearing for the first time in the British Pharmacopœia, it has been known in Pharmacy for years under the name of *Actæa racemosa.*

(U.S.; not in the others.)

Medicinal Properties.—Given in nervous diseases, neuralgia, chorea, and rheumatism. Relieves the pain of dysmenorrhœa (*L.* '89, i. 476). It is stated to assist the expulsive action of the uterus (*T.G.* '85, 336).

Preparations.

EXTRACTUM CIMICIFUGÆ LIQUIDUM.

Mix 20 of Cimicifuga, in No. 60 powder, with 40 of Rectified Spirit, and macerate forty-eight hours; then pack in a percolator and let it drain, then pour on more Spirit until the Cimicifuga is exhausted. Reserve the first 15 of the percolate, and evaporate the remainder by a water bath to a soft extract; dissolve this in the reserved portion, and add to it Rectified Spirit to make 20. =(1 in 1).

Dose.—3 to 30 minims.

(U.S.; not in the others.)

TINCTURA CIMICIFUGÆ.

Macerate 1 of Cimicifuga, in No. 40 powder, with 6 of Proof Spirit for forty-eight hours, agitating occasionally, pack in a percolator and let it drain, then pour on 2 of Proof Spirit; finally press, filter, and add Proof Spirit to make 8. =(1 in 8).

The Tincture formerly in the Companion as "Not Official" was twice the strength of this, and is still ordered as Tinctura Actææ Racemosæ (Squire) to distinguish it from the Official preparation.

Dose.—15 to 60 minims.

(U.S., 1 in 5; not in the others.)

CINCHONÆ CORTEX.

CINCHONA BARK.

The dried bark of *Cinchona Calisaya, C. officinalis, C. succirubra, C. lancifolia,* and other species of *Cinchona,* from which the peculiar alkaloids of the bark may be obtained.

Used in the preparation of Cinchonidinæ Sulphas, Cinchoninæ Sulphas, Quininæ Hydrochloras, Quininæ Sulphas.

Salts of Quinine and Cinchonine may also be obtained from some species of Remijia.

Only Red Cinchona Bark is now official for the Galenical preparations.

The ash was taken of six samples of Cinchona Bark:—Yellow Bark, 2·01 p. c. and 1·67 p. c.; Pale Bark, 2·95 p. c.; Red Bark, 3·07 p. c. and 2·06 p. c.; Cinchona nitida, 2·27 p. c.

(Austr., any species, especially Rubra; Belg., China Flava, China Fusca, China Rubra; Dan., China Calisaya, Fusca, Rubra; Dutch, Cinchona Succirubra; Fr., Quinquina any species; Ger., any species, especially Succirubra; Hung., China Calisaya and Succirubra; Norw. and Swed., Cinchona Calisaya; Port., Cinchona Flava, Fusca and Rubra; Russ., Cinchona Calisaya, Fusca, Rubra; Span., Cinchona Calisaya, Peruviana, and Succirubra; Swiss, China Calisaya, and Fusca; U.S., any species of Cinchona, especially Flava, Rubra.)

The Peruvian bark was known in Europe as early as 1640, on account of its having cured the Countess of Chinchon of a fever. We are ignorant of its early history, and how the Spaniards in Peru became acquainted with its virtues; but the Jesuits secretly conveyed it from Peru to Spain—hence it was called the Jesuits' Bark. Little was further known of it until the time of La Condamine, who visited Peru in 1738, and after whom Humboldt and Bonpland named the plant the *Cinchona Condaminea.* It was long supposed that only one species existed; a vast number, however, have been discovered, all of which possess medicinal properties, though varying much, both according to their species and the locality of their growth.

Medicinal Properties.—Tonic and antiperiodic, with some degree of astringency. It is especially useful in fevers of a remittent and intermittent character, when it should be given, in full doses, shortly before the cold stage. It has been found highly beneficial in many chronic cases. It is a valuable remedy in neuralgia and in erysipelas, also in convalescence from acute diseases. Powdered Bark has been used as a local application to foul ulcers. (*See also Quinine.*)

An almost white powder was sold in India as the Government Cinchona Febrifuge, which had an average percentage composition of 15·5 crystallizable Quinine, 33·5 Cinchonine, 29 Cinchonidine, 17 Amorphous Alkaloid, 5 colouring matter.

It has been suggested to mix the crystalline salts in the proportion of 4 parts of Sulphate of Quinine, 8 parts of Sulphate of Cinchonidine, 9 parts of Sulphate of Cinchonine.

The results of experiments in India proved that Sulphate of Quinidine was quite equal to Sulphate of Quinine in therapeutic value, and Sulphate of Cinchonidine very nearly so; and that Sulphate of Cinchonine, while possessing valuable febrifuge properties, was in large doses apt to cause nausea, vomiting, and derangements of the bowels, and was not quite so speedy in its action in arresting periodic fevers as the other alkaloids; that in nine-tenths of the fever cases of India, Cinchonidine is just as efficient as Quinine, and only about one-fourth of the cost.—*Cinchona Committee's Report,* 31 August, 1878.

1 part of Quinine dissolves in about 20 parts of Ether.
1 part of Quinidine dissolves in about 30 parts of Ether.

A strong solution of either of the above gives with Chlorine Water and Liquid Ammonia a green precipitate; in a dilute solution only a green coloration is produced.

1 part of Cinchonidine dissolves in about 100 parts of Ether.

1 part of Cinchonine dissolves in about 1000 parts of Ether.

Solutions of these, if pure, do not give a green precipitate or coloration with Chlorine Water and Ammonia.

CINCHONÆ RUBRÆ CORTEX.

RED CINCHONA BARK.

The dried bark of the stem and branches of cultivated plants of *Cinchona succirubra.*

Test.—When used for purposes other than that of obtaining the alkaloids or their salts, it should yield between 5 and 6 per cent. of total alkaloids, of which not less than half shall consist of Quinine and Cinchonidine, as estimated by the following methods:—

1. *For Quinine and Cinchonidine.*—Mix 200 grs. of Red Cinchona Bark, in No. 60 powder, with 60 grs. of Hydrate of Calcium; slightly moisten the powders with half an ounce of Water; mix the whole intimately in a small porcelain dish or mortar; allow the mixture to stand for an hour or two, when it will present the characters of a moist, dark-brown powder, in which there should be no lumps or visible white particles. Transfer this powder to a 6-oz. flask, add 3 fluid oz. of Benzolated Amylic Alcohol, boil them together for about half an hour, decant and drain off the liquid on to a filter, leaving the powder in the flask; add more of the Benzolated Amylic Alcohol to the powder, and boil and decant as before; repeat this operation a third time; then turn the contents of the flask on to the filter, and wash by percolation with more of the Benzolated Amylic Alcohol until the Bark is exhausted. If, during the boiling, a funnel be placed in the mouth of the flask, and another flask filled with Cold Water be placed in the funnel, this will form a convenient condenser which will prevent the loss of more than a small quantity of the boiling liquid. Introduce the collected filtrate, while still warm, into a stoppered glass separator; add to it 20 minims of Diluted Hydrochloric Acid, mixed with 2 fluid drachms of Water; shake them well together, and when the acid liquid has separated this may be drawn off, and the process repeated with Distilled Water slightly acidulated with Hydrochloric Acid, until the whole of the alkaloids have been removed. The acid liquid thus obtained will contain the alkaloids as Hydrochlorates, with excess of Hydrochloric Acid. It is to be carefully and exactly neutralised with Ammonia while warm, and then concentrated to the bulk of 3 fluid drachms. If now about 15 grs. of Tartarated Soda, dissolved in twice its weight of Water, be added to the neutral Hydrochlorates, and the mixture stirred with a glass rod, insoluble Tartrates of Quinine and Cinchonidine will separate completely in about an hour; and these collected on a filter, washed, and dried, will contain eight-tenths of their weight of the alkaloids, Quinine and Cinchonidine, which, divided by two, represents the percentage of those alkaloids. The other alkaloids will be left in the mother-liquor.

2. *For Total Alkaloids.*—To the mother-liquor from the preceding process add solution of Ammonia in slight excess. Collect, wash, and

dry the precipitate, which will contain the other alkaloids. The weight of this precipitate, divided by two, and added to the percentage weight of the Quinine and Cinchonidine, gives the percentage of total alkaloids.

The above tests and the standard differ from those of B. P. 1867.

Preparations.

DECOCTUM CINCHONÆ.

Red Cinchona Bark, in No. 20 powder, 1¼; Distilled Water, 20: boil ten minutes; when cold, strain, and pour on the marc sufficient water to make 20. =(1 in 16).

Red Bark is now used in the place of Yellow Bark.

The decoction thus made extracts only about half the active principle of the bark; the marc retains about the same quantity of Quinine as is found in the decoction. Formerly the Decoction was ordered to be strained while hot, and a large deposit fell on cooling; this deposit, however, contained only 1/24 of the active part of the bark, and now, by straining when cold, this is rejected.

Dose.—1 to 2 oz.

(Belg., China Fusca, 1 in 10, also Flava and Rubra 1 in 10; Dutch, 6 in 100; Norw., China Calisaya 1 in 10; also 1 in 10 with Sulphuric Acid; Port., Cinchona Flava 1 in 10, also Fusca 1 in 10; Russ., Cinchona Fusca, 1 in 4; also Calisaya 1 in 8, containing Sulphuric Acid; Span., Quina Calisaya 1 in 46, also Quina ex Loja 1 in 46. Not in the others.)

EXTRACTUM CINCHONÆ LIQUIDUM.

Red Cinchona Bark, in No. 60 powder, 20 oz.; Hydrochloric Acid, 5 drms.; Glycerine, 2½ oz.; Rectified Spirit and Distilled Water of each a sufficiency. Mix the bark with 5 pints of the Water to which the Acid and Glycerine have been added, and macerate in a covered vessel for forty-eight hours, stirring frequently; then transfer to a percolator, and when the fluid ceases to pass, and the contents of the percolator have been properly packed, continue the percolation with Water until 15 pints of liquid have passed, or that which is passing has ceased to give a precipitate on the addition to it of an excess of solution of Soda. Evaporate the percolated liquid in a porcelain or enamelled iron vessel at a temperature not exceeding 180° F. (82°·2 C.) until it is reduced to 20 fluid ounces.

Put 50 fluid grains of this liquid (*a*) with half an ounce of Distilled Water into a stoppered glass separator capable of holding 4 fluid ounces; add to this 1 fluid ounce of Benzolated Amylic Alcohol and half a fluid ounce of solution of Soda, shake them together thoroughly and repeatedly, then allow them to remain at rest until the spirituous solution of the alkaloids shall have separated and formed a distinct stratum over the dark-coloured alkaline solution of the other constituents of the extract. Run off the latter by the stopcock, add a little more Distilled Water to wash away any still adhering alkaline solution from the separator and its contents, and having run off this as before, as completely as possible, decant the spirituous solution into a small porcelain or glass dish the weight of which is known. Evaporate by the heat of a water bath until a perfectly dry residue is left. The weight now of the dish and its contents, after deducting the known weight of the dish, will give that of the alkaloids, and this multiplied by 2 will give the parts by weight of the alkaloids in 100 fluid parts of the liquid (*a*).

Having thus ascertained the alkaloidal strength of the liquid (*a*), every fluid part of it containing five grains of total alkaloids is first to be brought to the volume of eighty-five grains by evaporation, or if necessary by dilution with water, then 12·5 fluid grains of Rectified Spirit are to be added, and the final adjustment of the volume to 100 fluid grains is to be effected by the addition of Distilled Water. The finished liquid extract will thus contain five grains of the alkaloids of the bark in every 100 fluid grains.

The preparation of this has been entirely altered.

Dose.—5 to 10 minims.

Contains total alkaloids 5 per cent.

1 part of this extract is equal to about 1 of Bark.

(Dutch and U.S., Cinch. Flava, 1 in 1, contains 25 p. c. of Glycerine; not in the others.)

Ext. Cinch. Fluid. U.S. (Red Bark) is sometimes prescribed, it means the substitution of Red for Yellow Bark in that formula.

The following preparation has been largely used by dipsomaniacs, *M.T.* '79, i. 81; but in *B.M.J.* '80, i. 646, and *L.* '80, i. 938, its use is discouraged.

Quill Red Cinchona Bark 16 ounces, digested and afterwards percolated with a sufficient quantity of equal parts Rectified Spirit and Distilled Water, the percolate evaporated to 7½ fl. oz., and ½ fl. oz. Rectified Spirit added to make 8 fl. oz.

INFUSUM CINCHONÆ ACIDUM.

Red Cinchona Bark, in No. 40 powder, 1; Aromatic Sulphuric Acid, ¼; boiling Distilled Water, 20: infuse one hour, and strain. =(1 in 20).

This replaces the old Infusion made with Yellow Bark without acid.

Dose.—1 to 2 oz.

(U.S. (C. Flava), 6 in 100, with Aromatic Sulphuric Acid; Russ. (C. Rubra), 1 in 8, with Phosphoric Acid; Fr. (Tisane), 1 in 50; Span., 1 in 46, without acid. Not in the others.)

TINCTURA CINCHONÆ.

Red Cinchona Bark, in No. 40 powder, 4; Proof Spirit, 20; macerate forty-eight hours with 15 of the spirit, agitating occasionally, pack in a percolator and let it drain, then pour on the remaining spirit, and when it ceases to drop, press, and add sufficient Proof Spirit to make 20. =(1 in 5).

Red Bark is now used in the place of Yellow.

Dose.—½ to 2 drms.

(Belg., Tinctura Chinæ, Tinct. Chinæ Flavæ, Tinct. Chinæ Rubræ; Dan., Tinctura Chinæ Calisayæ; Dutch, Tinctura Chinæ Rubræ; Fr., Teinture de Quinquina, Gris, Jaune, also Rouge; Ger., Tinctura Chinæ (from any species); Hung., Tinctura Chinæ Simplex (from C. Succirubra); Norw. and Swed., Tinct. Chinæ (from C. Calisaya); Port., Tinctura de Quina (from C. Flava); Russ., Tinctura Chinæ (from C. Fusca); Span., Tintura Alcoholica de Quina (from C. Calisaya and C. Loja); Swiss, Tinctura Chinæ (from C. Fusca); U.S., Tinctura Cinchona (from C. Flava); all 1 in 5 and by weight. Not in Austr.)

TINCTURA CINCHONÆ COMPOSITA.

Red Cinchona Bark, in No. 40 powder, 4 oz.; Bitter Orange Peel, cut small and bruised, 2 oz.; Serpentary, bruised, 1 oz.; Saffron, 110 grains; Cochineal, 56 grains; Proof Spirit, 40 oz.; macerate forty-eight hours with 30 oz. of the spirit, agitating occasionally, pack in a percolator and let it drain, then pour on the remainder of the spirit; when it ceases to drop, press, and add sufficient Proof Spirit to make 40 oz. =(1 in 10)

Red Bark is now used in the place of Pale Bark, also the Saffron and Cochineal are slightly reduced.

Dose.—½ to 2 drms.

(Span., resembles Brit., but made with Loxa Bark; Austr., Belg., Ger., Hung., and Russ., Tinct. Chinæ Comp. (Tinct. Whyttii), with Cinchona, Gentian, Orange Peel, and Cinnamon (various strengths); Dan., Dutch, Norw., Swed., and Swiss (Tinct. Chinæ Comp.), similar to the above but without Cinnamon; Port. (Tinct. de Quina Comp.), Cinchona, Orange Peel, and Serpentary; U.S., the same with Glycerine. Not in Fr.)

(Huxham's Original Formula for Tincture of Bark in 1788.)

Powdered Peruvian Bark, 4 oz.; Orange Peel, 3 oz.; Serpentary Root, 80 grs. Saffron, 160 grs.; Cochineal, 80 grs.; Brandy, 40 oz.; digest 3 or 4 days.

Not Official.

INFUSUM CHINÆ FRIGIDE PARATUM (Russ.).—Powder of Red Bark, 18; Distilled Water, 144; Phosphoric Acid (sp. g. 1·130), 1.

SYRUPUS QUINIÆ DIKINATIS.—Introduced by Dr. Donovan of Dublin. 1 fluid drachm contains 2 grs. Dikinate of Quinine.

CINCHONIDINÆ SULPHAS.

SULPHATE OF CINCHONIDINE.

$(C_{20}H_{24}N_2O)_2$, H_2SO_4, $3H_2O$, eq. 768.

The sulphate of an alkaloid obtained from the bark of various species of Cinchona. It may be obtained from the mother-liquors of the crystallisation of Sulphate of Quinine by further concentration, purified by crystallisation from alcohol, and finally from hot water.

Colourless silky crystals, usually acicular, which lose 7 per cent. of moisture on drying at 212° F. (100° C.).

The formula given in Watts' Dict., Supp. p. 463, contains $6H_2O$, eq. to 13·2 p. c. A sample dried by us at 212° F. lost 12 p.c.

Solubility.—1 in 150 of Water; 1 in 4 of boiling Water; 1 in 60 of Rectified Spirit; sparingly in Chloroform; very sparingly in Ether.

Tests.—It dissolves in pure Sulphuric Acid with production of not more than a faint yellow coloration, and the fluid undergoes no apparent change when gently warmed. It leaves no ash on ignition; it twists a ray of polarised light to the left. An aqueous solution has a neutral or faintly alkaline reaction; it gives with solution of Tartarated Soda a white precipitate, the filtrate from which is rendered not more than slightly turbid with solution of Ammonia.

(Fr., Swiss and U.S.; not in the others.)

Medicinal Properties.—Similar to Quinine but not so powerful.

Dose.—1 to 10 grains.

CINCHONINÆ SULPHAS.

SULPHATE OF CINCHONINE.

$(C_{20}H_{24}N_2O)_2$, H_2SO_4, $2H_2O$, eq. 750.

The sulphate of an alkaloid obtained from the bark of various species of Cinchona and Remijia. It may be obtained from the mother-liquors of the crystallisation of the Sulphates of Quinine, Cinchonidine and Quinidine by precipitating the alkaloid with Caustic Soda, washing it with spirit until free from other alkaloids, dissolving in Sulphuric Acid, and after purifying the solution with Animal Charcoal, allowing to crystallise.

Hard, short, colourless prismatic crystals, which lose 5 per cent. of moisture on drying at 212° F. (100° C.).

A sample dried by us lost 2 p. c. at 212° F., and an additional 1 p. c. at 250° F.

Solubility.—1 in 70 of Water; 1 in 17 of boiling Water; 1 in 9 of Rectified Spirit; 1 in 60 of Chloroform; very sparingly in Ether.

Tests.—It dissolves in pure Sulphuric Acid without change of colour, and the solution undergoes no apparent change when gently warmed. When 25 grains of the salt is dried at 212° F. (100° C.) it should almost wholly dissolve in 4 oz. by weight of Chloroform. It leaves no ash on ignition and twists a ray of polarised light to the right. An aqueous solution has a neutral or faintly alkaline reaction.

Dose.—1 to 10 grains.

(Dutch, Fr., Port., Span., Swed., Swiss and U.S.; not in the others.)

CINNAMOMI CORTEX.

CINNAMON BARK.

The inner bark of shoots from the truncated stocks or stools of the cultivated *Cinnamomum Zeylanicum*, imported from Ceylon, and distinguished in commerce as Ceylon Cinnamon.

The ash was determined of Cortex and Pulvis Cinnamomi: Cortex (3 samples) 4·26, 4·02, 3·43 per cent.; Pulvis (4 samples) 4·61, 4·8, 5·07, 4·44 per cent.

(Belg., Fr. (Cannelle), Norw., Port. (Canella), and Swed., use Ceylon Cinnamon only. Austr., Ger. and Hung., use Chinese Cinnamon or Cassia only. Dan., Dutch, Russ., Span., Swiss and U.S., use both kinds.)

Medicinal Properties.—Stomachic, carminative, and astringent, chiefly used as an adjuvant to other medicines. Often employed with chalk in diarrhœa.

Dose of the powder, 10 to 20 grs.

Used in the preparation of Decoctum Hæmatoxyli, Infusum Catechu, Pulv. Catechu Co., Pulv. Cretæ Aromaticus, Pulv. Kino Compositus, Tinct. Cardam. Co., Tinct. Catechu, Tinctura Lavandulæ Comp., Vinum Opii.

Preparations.

AQUA CINNAMOMI.

Cinnamon Bark, bruised, 1; Water, 16: distil 8. =(1 in 8).

Dose.—1 to 2 oz.

(Austr., Belg., Dan., Dutch, Ger., Russ. and Swed., 1 in 10; Fr., Eau de Cannelle, 1 in 4; Hung., 1 in 5; Port., 1 in 8; Swiss, 1 in 20; Norw. and U.S., made with oil 1 in 500.)

Used in the preparation of Misturæ Cretæ, Guaiaci, and Spiritus Vini Gallici.

OLEUM CINNAMOMI.

The oil distilled from Cinnamon bark.

It is almost identical in composition with Oil of Cassia, both of which consist mainly of Cinnamic Aldehyd. Mixed with three or four times its volume of a saturated solution of Bisulphite of Potassium it sets to a crystalline mass.

Sp. g. (several samples taken) 1·022—1·043.

Solubility.—10 in 3 of Rectified Spirit; 1 in 45 of Proof Spirit.

Test.—4 drops dissolved in 2 drs. of Alcohol becomes greenish-blue on adding 1 drop of solution of Ferric Chloride; Oil of Cassia gives a brown colour, and after a short time becomes cloudy.

Possesses the carminative qualities of Cinnamon without its astringency.

Dose.—1 to 4 minims in pill, with powdered Mastic, or on sugar, or in emulsion.

(Belg. (Essentia), Dan.; Dutch; Fr. (Huile Volatile de Cannelle), Port. and Span., use Oil of Cinnamon; Austr., Ger., Hung., Norw. and Swed., use Oil of Cassia; Russ., Swiss and U.S., use both oils.)

PULVIS CINNAMOMI COMPOSITUS.

Cinnamon bark, 1; Cardamom seeds, 1; Ginger, 1, all in powder: mix. =(1 in 3)

Dose.—3 to 10 grs.

(Port., Pó de Canella Comp. Cinnamon 7, Cardamoms 7, Ginger 6; Pulvis Aromaticus—Belg. and Dutch, same as Brit.; Swed., Cinnamon 2, Cardamoms 1, Ginger 1; U.S., Cinnamon 7, Ginger 7, Cardamoms 3, Nutmeg 3; Russ., Cinnamon 4, Cloves, Mace, Nutmeg, Ginger, of each 1; Swiss, similar to Russ., but contains Cardamoms; not in the others.)

Used in the preparation of Pilula Aloes et Ferri, and Pilula Cambogiæ Composita.

SPIRITUS CINNAMOMI.

Oil of Cinnamon, 1; Rectified Spirit, 49: dissolve. =(1 in 50).

Sp. g. about 0·839.

Dose.—½ to 1 drm.

(Belg., 1 in 100; U.S., 1 in 10; Dutch, Port. and Span. (distilled from the bark). Not in the others.)

Used in the preparation of Acidum Sulphuricum Aromaticum.

TINCTURA CINNAMOMI.

Cinnamon bark, in coarse powder, 1; Rectified Spirit, 8: macerate forty-eight hours with 6 of the spirit, agitating occasionally, pack in a percolator and let it drain, then pour on the remaining spirit; when it ceases to drop, press, and add sufficient Rectified Spirit to make 8. =(1 in 8).

This now made with Rectified instead of Proof Spirit.

Dose.—½ to 2 drms.

(Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Norw., Port., Russ., Span., Swed., and Swiss, 1 in 5; U.S., 1 in 10; all by weight.)

COCA.

COCA.

The leaves of *Erythroxylon Coca*, dried, from Bolivia. They resemble the leaves of tea, but have a slightly visible curved line on each side of the midrib.

(Austr. and Belg., Folia Coca; Fr. and Port., Coca; Span., Coca del Peru; U.S., Erythroxylon. Not in the others.)

Medicinal Properties.—A nerve stimulant, restorative, and sustenant. It is chewed by the natives of Peru and Bolivia to sustain them during the day, that they may defer eating till the evening.

An extract is made from the fresh plant and imported into this country.

Preparations.

EXTRACTUM COCÆ LIQUIDUM.

Macerate 20 of Coca, in No. 40 powder, with 40 of Proof Spirit for forty-eight hours, pack in a percolator and let it drain, continue the percolation with more of the Spirit until the Coca is exhausted; reserve the first 15 of the percolate, and evaporate the remainder by a water bath to the consistence of a soft extract, dissolve this in the reserved portion, and add sufficient Proof Spirit to make 20.=(1 in 1).

Note.—As the Coca leaves would be but imperfectly exhausted by the first 15 parts of the spirit, and as the active constituents are greatly damaged or destroyed by heat, a fluid extract prepared by repercolation is much to be preferred. When thus prepared from carefully dried green leaves, it contains 25 p.c. of solid Extract (dried at 212° F.).

Dose.—½ to 2 drs.

(U.S., same as Brit.; not in the others.)

Belg. has solid Extract; French Codex has solid Extract, Tincture 1 in 5, Tisane 1 in 100.

Not Official.

EXTRACTUM COCÆ.—A solid alcoholic extract, of a green colour, prepared from carefully dried leaves.

Dose.—2 to 10 grains.

VINUM COCÆ. *Syn.* Vin de Coca, Fr.—Dried leaves of Coca 6, Vin de Grenache or Vin Rouge 100: macerate for 6 days and filter.

The Wine can also be made by adding an equivalent quantity of Liquid Extract to the Wine.

(Belg. and Fr., 6 in 100; Span., 1 in 30; not in the others.)

COCAINÆ HYDROCHLORAS.

HYDROCHLORATE OF COCAINE.

$C_{17}H_{21}NO_4, HCl$. eq. 339·5.

The Hydrochlorate of an alkaloid obtained from the leaves of *Erythroxylon Coca.*

It may be obtained by agitating with Ether an aqueous solution of an acidulated alcoholic extract, made alkaline with Carbonate of Sodium; separating and evaporating the ethereal liquid, purifying the product by repeating the treatment with acidulated Water, Carbonate of Sodium, and Ether; decolorising, neutralising with Hydrochloric Acid, and recrystallising.

Almost colourless acicular crystals or crystalline powder.

Solubility.—2 in 1 of Water; 1 in 2½ of Rectified Spirit; 1 in 2½ of Glycerine; almost insoluble in Ether; insoluble in Fixed Oils.

Tests.—It dissolves without colour in cold concentrated acids, but chars with hot Sulphuric Acid. It leaves no residue on ignition. Its aqueous solution dilates the pupil of the eye; it has a bitter taste, producing on the tongue a tingling sensation, followed by numbness; it gives a yellow precipitate with Chloride of Gold, a white precipitate with Carbonate of Ammonium, soluble in excess; a white precipitate with Liquid Ammonia, insoluble in excess (but which disappears after some time owing to its transformation into soluble decomposition products); it should yield little or no cloudiness with Chloride of Barium or Oxalate of Ammonium.

A delicate test for the purity of the salt is to add ½ c.c. of $\frac{1}{10}$ p.c. solution of Permanganate of Potassium to $\frac{1}{10}$ gramme of the Cocaine Salt dissolved in 5 c.c. of Water acidified with Sulphuric Acid. The colour should not disappear within an hour.

(Austr., Belg., Dutch, and Hung.; not in the others.)

Medicinal Properties.—Has been largely used for producing anæsthesia in examinations of and operations on the eye and throat; 2 to 4 per cent. solutions being used for the eye and 20 per cent. for the throat. It has also been used for producing anæsthesia of other portions of the mucous membrane, as the rectum, urethra, vagina, ear, and nose. It has been used successfully as a preventive of sea-sickness, in doses of $\frac{1}{4}$ to 1 grain in solution, and in doses of $\frac{1}{8}$ grain every half-hour in the vomiting of pregnancy. The local applications are assisted by subcutaneous injection for producing anæsthesia of the deeper seated tissues for minor operations. The solutions should always be freshly prepared to avoid the formation of a fungus which has been found in stale solutions, and which has produced injurious effects.

In operations for piles, *B.M.J.* '85, i. 227; *B.M.J.* '86, ii. 586; *L.* '86, i. 527; and for fistula, *L.* '87, ii. 793; in prostatic disease, *B.M.J.* '86, i. 822, 999; in parturition, *B.M.J.* '85, ii. 473; *L.* '86, i. 1148; for relief of pain in passing catheter, *B.M.J.* '86, ii. 413; in lithotrity, *B.M.J.* '88, i. 972; *B.M.J.* '87, i. 589; for scalds, burns, and blisters, *B.M.J.* '85, i. 300; *T.G.* '88, 360; in hay fever, *L.* '85, i. 1021; *B.M.J.* '86, ii. 18; *B.M.J.* '87, i. 1256; in morphinism, *B.M.J.* '85, ii. 1112; in diabetes, *L.* '89, ii. 735. It is also useful in alcoholism. Toxic effects, *L.* '86, i, 658; *B.M.J.* '85, ii. 971, 983, 1060; *B.M.J.* '87, i. 617; *B.M.J.* '88, i. 151, 757.

B. P. **Dose.**—$\frac{1}{5}$ to 1 grain.

Hypodermic solutions are made 4 to 10 p.c. according to the quantity of Cocaine required.

10 or 20 p.c. solution in Oil of Cloves for **external application** in neuralgia.

Antidote.—Inhalation of Nitrite of Amyl.—*B.M.J.* '87, i. 625, 695, 1401; *B.M.J.* '88, i. 757.

Preparation.

LAMELLÆ COCAINÆ.

Discs of Gelatine with some Glycerine, each weighing about $\frac{1}{50}$ grain and containing $\frac{1}{200}$ grain of Hydrochlorate of Cocaine.

Used in ophthalmic surgery.

Not Official.

GUTTÆ COCAINÆ HYDROCHLORATIS (*L.O.H.*).—Hydrochlorate of Cocaine, 10 grs.; Distilled Water, 1 oz.

COCAINE.—Crystallises in colourless prisms. Melts at 208° F. (98° C.), and when cooled solidifies to a transparent mass which gradually becomes white and crystalline.

Solubility.—About 1 in 1300 of Water (Paul); 1 in 10 of Rectified Spirit; 1 in 12 of Olive Oil; 1 in 4 of Oleic Acid; 2 in 1 of Chloroform; 1 in 4 of Ether; 1 in 14 of Oil of Turpentine. Insoluble in Glycerine.

COCCUS.

COCHINEAL.

The female insect, *Coccus Cacti,* dried; reared on *Opuntia Cochinillifera,* and on other species of *Opuntia,* in Mexico and Teneriffe.

When killed by a dry heat the insects are of an ash-grey colour with a silvery surface, but when killed by immersion in boiling water they have a reddish appearance.—*Watts' Dict.*

(U.S., Coccus; Belg., Dan., Russ., and Swed., Coccionella; Fr., Cochenille; Port., Cochonilha; Span., Cochinilla; not in the others.)

Medicinal Properties.—Used chiefly as a colouring agent. Was formerly given in whooping cough.

Used in the preparation of Tinct. Cardamomi Comp., and Tinct. Cinchonæ Comp.

Preparations.

TINCTURA COCCI.

Cochineal, in powder, 1; Proof Spirit, 8: macerate seven days, agitating occasionally; strain, press, filter, and add sufficient Proof Spirit to make 8. =(1 in 8).

Dose.—30 to 90 minims twice a day. (Used chiefly for colouring medicines.)

(Fr., 1 in 10 ; by weight; not in the other Pharmacopœias.)

Not Official.

CARMINE.—Prepared from Cochineal, an excellent colouring agent for powders and ointments.

LIQUOR CARMINI (*U.S.N.F.*).—Carmine, 480 grs. ; Water of Ammonia, 6 fl. ozs. ; Glycerine, 6 fl. ozs. ; Water sufficient to make 16 fl. ozs.

CODEINA.

CODEINE.

$C_{18}H_{21}NO_3, H_2O$, eq. 317.

An alkaloid contained in Opium. It is separated from the ammoniacal liquors from which Morphine has been obtained by evaporating, treating the residue with water, precipitating with Caustic Potash and purifying the precipitated alkaloid by recrystallisation from Ether. Colourless or nearly colourless octahedral crystals; its aqueous solution has an alkaline reaction and a bitter taste.

Solubility.—1 in 80 of Water ; 1 in 24 of boiling Water ; 1 in 2 of Rectified Spirit ; 1 in 2 of Chloroform ; 1 in 30 of Ether ; 1 in 12 of Benzol.

Tests.—It dissolves in Sulphuric Acid, forming a solution colourless or tinged with pink, which when gently warmed with a small fragment of Molybdate of Ammonium or a drop of a weak solution of Perchloride of Iron assumes a deep blue colour; with Selenious Acid it gives a deep green colour. Moistened with strong Nitric Acid it becomes yellow, but not red. Yields no ash on ignition.

(Belg., Dutch, Fr., Ger., Hung., Port., Russ., Span., Swed., Swiss and U.S. ; not in the others.)

Medicinal Properties.—It has been given with benefit in diabetes (an entire abstinence of starchy food being strictly observed) in doses of 1 gr. three times a day, gradually raised to 2 grs. It has also been given in chronic laryngitis.

It has a powerful action in allaying abdominal pain and it can be pushed to a much greater extent than Morphine without causing drowsiness or interfering with the respiration or with the action of the bowels.—*B.M.J.* '88, i. 1214.

Dose.—¼ to 2 grs.

Not Official.

SYRUPUS CODEINÆ (*B.P.C.*).—Codeine, 8 grs. ; Proof Spirit, ½ oz. ; Water, ½ oz. ; dissolve and add Syrup to make 8 oz.

This is the same strength as in former editions of the Companion, half the Water being replaced by Proof Spirit.

Dose.—1 to 2 teaspoonfuls for a cough.

CODEINE PASTILS.—Jujubes containing ⅛th grain of Codeine in each. One for a dose when the cough is troublesome.

An improvement on Codeine Jelly.

CODEINÆ PHOSPHAS.—The most soluble salt of Codeia. It dissolves 1 in 4 of Water ; but it is precipitated after a time by the addition of Rectified Spirit.

COLCHICI CORMUS.*

COLCHICUM CORM.

The fresh corm of *Colchicum autumnale* (collected about the end of June or early in July), stripped of its coats, sliced transversely, and dried at a temperature not exceeding 150° F. (65°·5 C.).

Test.—Best tested by its bitterness.

(Fr., Port., Span., and U.S.; not in the others.)

Medicinal Properties.—Produces increased action of the kidneys and intestinal glands; the action of the skin is also increased, and the power of the heart diminished. Employed chiefly in gout, controlling the pain and inflammation. Affords relief in acute rheumatism and other inflammatory affections. May be used combined with other purgatives in cases of imperfect action of the liver. It has also been used in dropsy. It is apt to produce depression if given on an empty stomach. The Acetic Extract is frequently prescribed with Dover's Powder to relieve painful gout.

In very large doses Colchicum is a powerful stimulant of the liver and intestine. It renders the bile more watery, but increases the secretion of biliary matter proper.—Dr. Rutherford.

Dose of the powder, 2 to 8 grs. every 4 or 6 hours.

Incompatibles.—Tincture of Iodine, Guaiacum, and all astringent preparations.

Antidotes.—In case of poisoning with Colchicum, emetics followed by demulcent drinks, and, if coma be present, Brandy, Ammonia, Coffee, and other powerful stimulants may be given. Hypodermic injection of ½ gr. of Morphine.

Preparations.

EXTRACTUM COLCHICI.

The expressed juice of fresh Colchicum Corms (deprived of their coats), cleared of deposit, heated to 212° F. (100° C.), strained, and evaporated to a pill consistence at a temperature of 160° F. (71°·1 C.).

100 pounds of Corms yield 4 pounds of Extract.

Dose.—½ to 2 grs.

(Not in the other Pharmacopœias. Belg. and Fr., Alcoholic Extract of Seeds; Span., Alcoholic from Corms; U.S., Fluid Extracts of Corms and Seeds.)

EXTRACTUM COLCHICI ACETICUM.

Crushed fresh Corms, previously peeled, 112; Acetic Acid, 6: stir together, press, and after subsidence heat the clear liquor to 212° F. (100° C.), strain through flannel, and evaporate at 160° F. (71°·1 C.) to a soft extract.

100 pounds of Corms yield about 5 pounds of Extract.

Dose.—½ to 2 grs., in pill, with an equal weight of Liquorice Powder.

(Port. and U.S.; not in the other Pharmacopœias.)

VINUM COLCHICI.

Colchicum Corms, sliced, dried, and reduced to No. 20 powder, 4;

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* It is biennial. The young corm (an offset of the old one) first appears about the end of June; it flowers late in autumn, the impregnated germen remains latent under ground quite close to the bulb until the following spring, when the capsule rises above the surface, accompanied by several long upright leaves, the seeds ripening in June; after which the leaves decay. The corm is considered to be most active when it is a year old, that is about July.

Sherry, 20; macerate seven days, agitating occasionally, strain, press, and add Sherry to make 20. =(1 in 5).

Dose.—10 to 30 minims.

(U.S., 1 and 2·5 Stronger White Wine; Fr., 1 and 10 Malaga; Port., 1 and 10 Madeira. The following are made with the **Seeds**:—Austr. and Dutch, 1 and 10 Malaga; Hung. and Swiss, 1 and 5 Malaga; Belg., 1 and 6·6 Malaga and Spirit; U.S., 15 in 100 Stronger White Wine; Dan., Ger., Norw. and Russ., 1 and 10 Sherry; Port., 1 and 10 Madeira; Fr., 1 and 16·6 Malaga; Span., 1 and 16·6 Sherry.)

COLCHICI SEMINA.

COLCHICUM SEEDS.

The seeds, carefully dried, of *Colchicum autumnale*, when fully ripe (gathered about the end of July or beginning of August).

Four samples examined for total alkaloids yielded ·608, ·660, ·872, 1·09 p.c.; the tincture should be standardised.

(Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Norw., Port., Russ., Span., Swed., Swiss and U.S.)

Medicinal Properties.—Similar to those of the corm, but considered by some to be superior both in certainty of effect and mildness of operation.

Preparation.

TINCTURA COLCHICI SEMINUM.

Colchicum Seeds, finely comminuted, 1; Proof Spirit, 8: macerate forty-eight hours with 6 of the spirit, agitating occasionally, pack in a percolator, and let it drain, then pour on the remainder of the spirit; when it ceases to drop, press, filter, and add sufficient Proof Spirit to make 8. =(1 in 8).

Dose.—10 to 30 minims.

(Austr., 1 in 10; Belg., Fr., Hung., Port. and Swiss, 1 and 5; Dan., Dutch, Ger., Russ. and Swed., 1 and 10; U.S., 15 in 100: all from Seeds. Port. and Span., 1 and 5 with Corms: all by weight. Not in the others.)

Not Official.

MISTURA COLCHICI.—Tincture of Colchicum Seeds, 15 minims; Bicarbonate of Potash, 10 grs.; Pimento Water, to 1 oz.—*London Hospital.*

TINCTURA COLCHICI COMPOSITA (*P.L.*).—Colchicum Seeds, bruised, 1; Aromatic Spirit of Ammonia, 8: macerate for seven days, then press and strain.

Dose.—15 to 30 minims.

TINCTURA COLCHICI FLORUM.—Fresh Flowers, 2; Rectified Spirit, by weight, 1: digest seven days.

It will yield on the average ·1 p.c. of total alkaloid.

Dose.—10 to 30 minims. This preparation closely resembles the Eau Médicinale, and is considered by some medical men to be the most effective preparation of any.

Not Official.

COLLINSONIA.

The root of *Collinsonia Canadensis.*

Various preparations of this have been recommended in acute cystitis and in the treatment of renal calculi.—*B.M.J.* '87, ii. 712; *L.* '88, i. 68.

Preparation.

TINCTURA COLLINSONIÆ.—Root, 1; Proof Spirit, 10.

Dose.—30 to 120 minims.

COLLODIUM.

COLLODION.

Pyroxylin, 1; Ether, 36; Rectified Spirit, 12: mix the ether and spirit, and add the pyroxylin. In a few days decant the clear solution.

Mixes with Ether; but when mixed with Water or Rectified Spirit the Pyroxylin is thrown out.

Tests.—Colourless and highly inflammable, with ethereal odour; it dries rapidly upon exposure to the air, and leaves a thin transparent film. Poured on the skin, contracts in drying.

(Austr., proportions not given; Belg., Pyroxylin 1, Ether 20, Rectified Spirit 2½, Castor Oil 1½; Dan. and Russ., Pyroxylin 1, Ether 18, Rectified Spirit 3; Dutch, Pyroxylin 3, Ether 80, Rectified Spirit 17; Fr., Pyroxylin 1, Ether 15, Spirit 4; Ger., Pyroxylin 1, Ether 21, Rectified Spirit 3; Hung.; Norw., Pyroxylin q.s., Ether 6, Rectified Spirit 1: Port., Pyroxylin 1, Ether 14, Rectified Spirit 4, Castor Oil 1; Span., Pyroxylin 1, Ether 25, Rectified Spirit 3; Swed., Pyroxylin 1, Ether 35, Rectified Spirit 5; Swiss, Pyroxylin 1, Ether 18, Rectified Spirit 1; U.S., Pyroxylin 4, Stronger Ether 70, Rectified Spirit 26: all by weight.)

Preparations.

COLLODIUM FLEXILE. *Syn.* COLLODIUM ELASTICUM.

Collodion, 12 oz.; Canada Balsam, ½ oz. (by weight); Castor Oil, ¼ oz. (by weight): mix.

It does not contract in drying.

(Dutch, Collodion 96, Castor Oil 4; Fr., Collodion 15, Castor Oil 1; Austr. and Ger., Collodion 49, Castor Oil 1; Hung., Collodion 50, Castor Oil 1; Norw. and Swed., Collodion 100, Glycerine 1; Russ., Collodion 50, Castor Oil 1; Dan., Collodion 99, Castor Oil 1; Span., Collodion 10, Castor Oil 1; U.S., Collodion 92, Canada Turpentine 5, Castor Oil 3; Belg., Collodium, and Port., Collodio both contained Castor Oil. *See* COLLODIUM.)

Medicinal Properties.—Chiefly used for coating with a protecting film diseased or wounded parts; it has been recommended as an application to erysipelas, burns, boils, and to prevent the pitting of small-pox. A large number of substances can be dissolved in Collodion to form medicated Collodions; some of these are noticed under other headings.

COLLODIUM VESICANS (BLISTERING COLLODION).—*See* CANTHARIS.

Not Official.

STYPTIC COLLOID (DR. RICHARDSON'S).—A Saturated Solution of Tannic Acid and Xyloidine or Gun-Cotton in Absolute Alcohol and Pure Ether. In the first step of the process, the Tannic Acid, rendered as pure as it can be, is treated with Absolute Alcohol, and digested in it for several days. Then the Pure Ether, also absolute, is added until the whole of the thick Alcoholic Mixture is rendered quite fluid. Lastly the Xyloidine is added until it ceases readily to dissolve. A little Benzoin may be added to give an agreeable odour to the Colloid.

It can be applied directly with a brush, or mixed with an equal quantity of ether, and used in the form of **spray**.

HÆMOSTATIC COLLODION (DR. PAVESI'S).—Collodion, 100; Carbolic Acid, 10; Tannic Acid, 5; Benzoic Acid, 5: dissolve. Is applied by means of a pencil, or by soaking strips of linen in it.

COLLODIUM SALICYLICUM.—*See* ACIDUM SALICYLICUM.

COLOCYNTHIDIS PULPA.

COLOCYNTH PULP.

The dried and decorticated fruit of *Citrullus colocynthis,* freed from the seeds, but commercially this is imperfectly done.

The fruit is imported chiefly from Smyrna, Trieste, France, and Spain.

100 parts of the finest decorticated Turkey Colocynth yielded 34 parts of pulp and 66 parts of seeds.

The ash was determined of Pulp alone, 13·98 p. c.; also Seeds alone, 2·24 p. c.; also five purchased samples of Pulvis, 6·5, 4·93, 6·3, 9·37, 12·4 p. c.

(Austr., Belg., Dan., Dutch, Fr. (Coloquinte), Ger., Hung., Norw., Port. (Coloquintidas), Russ., Span. (Coloquintida), Swed., Swiss and U.S.)

Medicinal Properties.—It is a powerful drastic hydragogue cathartic, dangerous in large doses; but very commonly prescribed as an aperient, in the form of Compound Extract or Pill combined with Henbane. The Tincture is ordered in Mixtures.

In large doses a powerful hepatic as well as intestinal stimulant; it renders bile more watery, but increases the secretion of biliary matter.—Dr. Rutherford.

Dose.—2 to 8 grs. Seldom prescribed alone.

Preparations.

EXTRACTUM COLOCYNTHIDIS COMPOSITUM.

Colocynth pulp, free from seeds, 6; Extract of Socotrine Aloes, 12; Resin of Scammony, in powder, 4; Curd Soap, in powder, 3; Cardamom seeds, in the finest powder, 1; Proof Spirit, 160: macerate the colocynth in the spirit for four days; press out the tincture, distil off the spirit, and add to it the aloes, soap, and scammony; and evaporate by a water bath to a pilular consistence, adding the cardamoms towards the end of the process.

The product weighs 24, therefore in every 6 of Extract. Coloc. Compos. there is the power of $1\frac{1}{2}$ of pulp = Simple Extract $\frac{1}{2}$, Extract of Aloes 3, Resin of Scammony 1, Curd Soap $\frac{3}{4}$, Cardamoms $\frac{1}{4}$, Water $\frac{1}{2}$.

Curd Soap is now used in the place of Hard Soap.

Dose.—2 to 5 grs. with 2 or 3 grs. of Extract of Hyoscyamus, to prevent griping.

(Port., Colocynth 30, Aloes 55, Scammony 22, Hard Soap 15, Cardamoms 3; Span., contains Colocynth, Aloes, Scammony, and six other ingredients; Swed., Colocynth 5, Aloes 10, Scammony 3, Cardamoms 1, Soap 2; Swiss, Extract of Colocynth 2, Extract of Aloes 10, Scammony 4, Cardamoms 1, Soap 3; Russ., Extract Colocynth 3, Aloes 10, Scammony 8, Extract of Rhubarb 5; U.S., Extract Colocynth 16, Purified Aloes 50, Resin Scammony 14, Cardamoms 6, Soap 14: not in the others.)

(Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Russ. and U.S., have Simple Extract made with Alcohol.)

PILULA COLOCYNTHIDIS COMPOSITA.

Colocynth pulp, in powder, 1; Barbadoes Aloes, in powder, 2; Resin of Scammony, in powder, 2; Sulphate of Potassium, in powder, $\frac{1}{4}$; Oil of Cloves, $\frac{1}{4}$; Distilled Water, a sufficiency (about $\frac{1}{4}$): mix. =(about 1 in 6).

Resin of Scammony now used in the place of Scammony.

Made with Water as directed, the pill soon becomes hard—Syrup or Glycerine would have been better.

Dose.—2 to 8 grs. (Dr. Gregory's favourite pill.)

(Fr., Colocynth in powder 10, Aloes 10, Scammony 10, Honey q.s., Oil of Cloves ·2; Norw., Colocynth 12, Aloes 4, Scammony 4, Oil of Cloves $\frac{2}{3}$, Suet 3, Glycerine 3; Span., Compound Extract of Colocynth 20, Extract of Colchicum 20, Extract of Opium 1; Swed., Compound Extract of Colocynth 7, Cloves 1, Jalap 2, Extract of Wormwood q.s. Not in the other Pharmacopœias.)

PILULA COLOCYNTHIDIS ET HYOSCYAMI.

Colocynth Pulp, in powder, 1; Barbadoes Aloes, in powder, 2; Resin of Scammony, in powder, 2; Sulphate of Potassium, in powder, $\frac{1}{4}$; Oil of Cloves, $\frac{1}{4}$; Extract of Hyoscyamus, 3; Distilled Water, a sufficiency: mix. =(Pil Coloc. Co. 6; Extr. Hyos. 3).

Resin of Scammony now used in the place of Scammony.

Dose.—3 to 10 grs. (Dr. Christison's favourite pill.)

(Not in the other Pharmacopœias.)

Not Official.

TINCTURA COLOCYNTHIDIS.—Colocynth pulp, in coarse powder, 1; Rectified Spirit, 10.

Dose.—10 to 15 minims three times a day.

(Belg. and Hung., 1 in 5; Russ. and Swiss, 1 in 10; Ger., Fruits 1, Alcohol 10; Dan., Norw., and Swed., 1 in 10, with Anise Fruits $\frac{1}{10}$; Dutch, 1 in 14, with $\frac{1}{8}$ Anise Fruits.)

Not Official.

CONDURANGO CORTEX.

The bark obtained from *Gonolobus condurango.*

(Austr., Dutch, and Ger.; not in the others.)

Medicinal Properties.—It was introduced as a remedy for cancer, but it has not fulfilled the expectations formed of it. It relieves catarrh and hyperæsthesia of the stomach, and has been used with benefit in cancer of the stomach.—*L.M.R.* '88, 337.

CONFECTIONES.

CONFECTIONS.

The following are now contained in the British Pharmacopœia, the formulas for which will be found under the names of the substances from which they are prepared:—

CONFECTIO OPII. 1 of powder of Opium in 40. Dose 5 to 20 grs.
CONFECTIO PIPERIS. Dose, 1 to 2 drms.
CONFECTIO ROSÆ CANINÆ. } Dose, 1 drm. or more.
CONFECTIO ROSÆ GALLICÆ. }
CONFECTIO SCAMMONII. Dose, 10 to 30 grs.
CONFECTIO SENNÆ. Dose, 1 to 2 drms.
CONFECTIO SULPHURIS. Dose, 1 to 2 drms.
CONFECTIO TEREBINTHINÆ. Dose 1 to 2 drms. for adults, 1 drm. for children.

CONII FOLIA.

HEMLOCK LEAVES.

Syn. CICUTÆ FOLIA. CIGUË FEUILLE.

The fresh leaves and young branches of Spotted Hemlock, *Conium maculatum* (annual), from wild British plants, gathered in June, when the fruit begins to form.

Test.—The leaf rubbed with Solution of Potash gives out strongly the odour of Conine.

(Belg. and Fr., Leaves; Austr., Dan., Dutch, Ger., Norw., Port., Russ., Span., Swed. and Swiss, Herb. Not in Hung., or U.S.)

Medicinal Properties.—Anodyne and antispasmodic; allays the cough in bronchitic affections, pertussis, and phthisis. Has also been recommended in chorea. May be applied externally in the form of a cataplasm to ease pain, especially in cancer.

Dose.—2 to 8 grs. in powder.

Incompatibles.—Caustic Alkalies, Vegetable Acids, and Astringents.

Antidotes.—In case of poisoning by Hemlock, emetics followed by stimulants internal and external, artificial respiration long continued.

Preparations.

CATAPLASMA CONII.

Juice of Hemlock, 1 oz.; Linseed Meal, 4 oz.; boiling Water, 10 oz.: evaporate the Hemlock Juice to half its volume, add this to the Linseed Meal and water previously mixed, and stir them together.

(For 1 Cataplasm).

Note.—Juice now substituted for leaves, and evaporated to get rid of the spirit.

(Span., Powdered Hemlock 6, Linseed Meal 6, Water 35. Not in the other Pharmacopœias.)

EXTRACTUM CONII.

Inspissated juice of the fresh plant, prepared as directed for Extractum Belladonnæ.

100 lbs. plant yield 50 lbs. juice = from 55 to 60 oz. extract; 100 lbs. leaves, when dried, weigh 21 lbs.

Dose.—2 to 8 grs.

(Austr., alcoholic from **dried herb**; Belg. (*E. Cicutæ*) juice from **leaves** evaporated and mixed with an equal quantity of alcohol, filtered and evaporated; Dan., made from **herb** with dilute spirit and water; Dutch, alcoholic from **fresh herb**; Fr., from clarified juice of **fresh leaves**, also alcoholic from **seeds**; Port., clarified juice of **fresh herb** evaporated, also alcoholic from **fresh plant**, also the same purified again with alcohol; Russ., aqueous from **herb**; Span., clarified juice of **fresh herb** evaporated, also aqueous from **dried leaves**, also alcoholic from **dried leaves**; Swed., alcoholic from **herb**; Swiss, alcoholic from **leaves**; U.S., alcoholic from **seeds**, also Abstractum Conii, and a fluid extract from **seeds**. Not in Ger., Hung., or Norw.)

PILULA CONII COMPOSITA.

Extract of Hemlock, 5; Ipecacuanha, 1; Treacle sufficient to form a mass.

Dose.—5 to 10 grs.

(Not in the other Pharmacopœias.)

SUCCUS CONII.

Express the juice from bruised fresh leaves; to every 3 measures of juice add 1 of Rectified Spirit. Filter after seven days. Keep in a cool place.

12 minims = 1 grain of extract.

Dose.—30 to 60 minims; but sometimes given in much larger doses.

(Not in the other Pharmacopœias.)

VAPOR CONINÆ.—INHALATION.

Juice of Hemlock, 1 oz.; Solution of Potash, 2 drs.; Distilled Water, 2 oz.: mix.

Put 20 minims of the mixture on a sponge, in a suitable apparatus, so that the vapour of hot water passing over it may be inhaled.

Juice of Hemlock is now used instead of Extract.

(Not in the other Pharmacopœias.)

CONII FRUCTUS.

HEMLOCK FRUIT.

Syn. Cicutæ Fructus. Cigüe Fruit.

The fruit of *Conium maculatum*, gathered when fully developed, but while still green (about July), and carefully dried.

Green fruits now ordered in place of ripe fruits.

(Belg., Fr., Port., Span. and U.S. Not in the others.)

Medicinal Properties.—Used in the same cases as Conii Folia.

Preparation.

TINCTURA CONII.

Hemlock Fruit, finely comminuted, 1; Proof Spirit, 8: macerate forty-eight hours with 6 of the spirit, agitating occasionally, pack in a percolator and let it drain, then pour on the remaining spirit; when it ceases to drop, press, mix, filter, and add sufficient Proof Spirit to make 8. =(1 in 8).

Dose.—20 to 60 minims.

(Belg. and Port., Tinct. Cicutæ, 1 in 5, also Fresh Herb 1, Spirit 1; U.S., (with Hydrochloric Acid and Alcohol), 15 in 100; Fr., Span. and Swiss, from dried leaves, 1 in 5, Fr., also Alcoolature, fresh Herb 1, Spirit 1, also Ethereal 1 in 5. Not in the others.)

Not Official.

CONINA.—*Syn.* Cicutine. $C_8H_{15}N$, eq. 125. A colourless volatile liquid alkaloid, with a characteristic penetrating odour. It is obtained from *Conium maculatum* by distilling the fruit with dilute Potash or Soda, and purified by redistillation. It unites with acids to form crystalline salts, which are much more stable than the alkaloid.

Sp. g. ·886. It boils at 336° F. (169° C.).

Solubility.—1 in 100 of Water. It mixes in all proportions with Alcohol and Ether.

(Belg., Fr., Russ., Span., Swed. and Swiss. Not in the others.)

CONINÆ HYDROBROMAS.—A colourless crystalline salt.

Solubility.—1 in 2 of Water; 1 in 3 of Rectified Spirit.

Not Official.

CONVALLARIA.

The entire plant of *Convallaria majalis* (Lily of the Valley).

(Fr., Muguet; Span., Lirio de los Valles; not in the other Pharmacopœias.)

Medicinal Properties.—It has been long employed by the Russian peasantry as a remedy for dropsy. Professor Sée considers that it may be used in all forms of heart failure, for it has none of the nauseating effects of Digitalis, nor does it exhaust the contractility of the heart and arteries. Dr. Sansom has employed it as a substitute for Digitalis, and is convinced of its action in promoting a stronger ventricular contraction, but is not yet convinced of its superiority to Digitalis (*B.M.J.* '83, i. 148). A cardiac tonic, specially useful in aortic regurgitation, and in mitral stenosis (*L.* '87, ii. 202, 320).

Preparations.

EXTRACTUM CONVALLARIÆ.—(Fr. and Span.)—Stalks and flowers of Convallaria freshly gathered and dried with one-third quantity of leaves and roots. Cut and infuse twelve hours in six times the weight of distilled water. Press, and repeat the operation. Mix the two liquors and evaporate to a soft extract. Dissolve this in sufficient cold Distilled Water. Filter and evaporate over a water-bath to the consistence of a hard extract. Also made from expressed juice, clarified.

The Russians prepare it from the flowers only.

Dose.—Professor Séo gave ½ to 1 gramme daily. Dr. Sansom recommends 5 to 8 grs. three times a day. Convallaria contains 2 glucosides—Convallarin, a purgative, and Convallamarin, allied to Digitalin in its action on the heart; the dose of the latter is ⅛ to 2 grains.

TINCTURA CONVALLARIÆ (*B.P.C.*).—Lily of the Valley flowers and stalks, dried in No. 20 powder, 1; Proof Spirit sufficient to percolate 8.

Dose.—5 to 20 minims.

COPAIBA.

COPAIVA.

The Oleo-Resin obtained by cutting deeply or boring into the trunk of *Copaifera Langsdorffii*, and other species of Copaifera.

Chiefly from the valley of the Amazon.

A transparent liquid, varying in colour from a light yellow to a golden brown. Sp. g. ·940—·993.

Solubility.—(nearly clear) 1 in 1 (*or less*) of Rectified Spirit, but if more spirit be added it becomes cloudy; in all proportions of Absolute Alcohol, Ether, Benzol, and the fixed and volatile Oils; also in four times (*or less*) its bulk of Petroleum Spirit, the solution only yielding a filmy deposit on standing; also 1 in 2 (*or less*) of Glacial Acetic Acid.

Test.—When dissolved in about 20 parts of Carbon Bisulphide and a drop of a cooled mixture of equal parts of Sulphuric and Nitric Acids added, if Gurjun Balsam be present it takes a splendid violet colour, which lasts several hours.

(Austr., Belg., Dan., Dutch, Fr. (Copahu), Ger., Hung., Norw., Port. (Terebinthina Copahiba), Russ., Span., Swed., Swiss and U.S.)

Medicinal Properties.—Stimulant and diuretic. Acts upon the mucous membrane, more particularly on that of the genito-urinary organs and of the rectum. Used in gonorrhœa and gleet. Useful in chronic bronchitis when there is excessive mucous secretion.

To be avoided in febrile states of the system and in renal dropsy.

Dose.—20 to 60 minims three times a day.

Given floating on aromatic water, or sometimes with Spirit of Nitrous Ether. A less disagreeable form is that of emulsion, prepared by rubbing the Copaiva first with mucilage, or the yolk of an egg and sugar, and then with some aromatic water. It is also prescribed with Liquor Potassæ, with which it forms a soap.

Both Copaiva and the Oil can be rendered emulsive by trituration with mucilage. 1½ oz. of mucilage should be used for every ounce of Copaiva, and either Cinnamon or Peppermint Water, with Tinct. of Orange or Ginger, covers the unpleasant taste. The Balsam and the Oil are also put into capsules.

Preparation.

OLEUM COPAIBÆ.

The Oil distilled from Copaiva.

Sp. g. about ·890, but varies considerably with the age of the oil and its exposure to air.

It has a neutral reaction. Boils between 245° and 260° C.

Solubility.—1 in 20 of Rectified Spirit; nearly insoluble in Proof Spirit; mixes in all proportions with Absolute Alcohol.

Dose.—5 to 20 minims in emulsion with mucilage or yolk of egg.

(Russ., Ol. Bals. Copaivæ; U.S.; not in the other Pharmacopœias.)

Not Official.

MISTURA COPAIBÆ.—Copaiva, 20 minims; Tincture of Quillaia, 20 minims; Spirit of Nitrous Ether, 30 minims; Camphor Water to 1 oz.—*London Hospital.*

PASTA COPAIBÆ.—Copaiva, 8; Powdered Cubebs, 24; Extract of Hyoscyamus, 1; Camphor, 1; Treacle, q.s.

Dose.—A piece the size of a filbert nut three or four times a day in gonorrhœa.—*L.* '88, i. 1019.

PILULA COPAIBÆ.—Copaiba, 94; Magnesia, 6; mix intimately and set aside to concrete. Should the mixture not concrete in eight or ten hours, the Copaiba before use should be shaken with $\frac{1}{20}$ of its weight of Water, then the uncombined Water allowed to subside and the Copaiba poured off.

(Balsamum Copaibæ Solidefactum, Belg.; Massa Copaiba, U.S.)

RESINA COPAIBÆ.—Prepared from the Oleo-resin by distilling off the Volatile Oil.

A yellowish or brownish-yellow brittle resin, with an acid reaction.

Solubility.—Soluble in Alcohol.

If rubbed well with double its weight of compound Almond Powder into a paste, will form an emulsion with water.

(U.S.; not in the other Pharmacopœias.)

CORIANDRI FRUCTUS.

CORIANDER FRUIT.

The ripe fruit of *Coriandrum sativum* dried; cultivated in Britain.

The ash was determined of the fruits (three samples), 4·69, 5·28, 5·74 per cent., and of Pulvis Coriandri, 5·64, 5·7, 7·79, 7·09 per cent.

(Austr., Belg., Dan., Dutch, Fr., Hung., Norw., Port. (Coentro), Russ., Span. (Colantro), Swed., Swiss and U.S.; not in Ger.)

Medicinal Properties.—Stimulant, aromatic, and carminative.

Dose.—20 to 60 grs.

Contained in Confectio Sennæ, Syr. Rhei, Tinctura Rhei, and Tinct. Sennæ.

Preparation.

OLEUM CORIANDRI.

The Oil distilled in Britain from the fruit.

Sp. g. (several examples examined) ·867—·887.

Solubility.—2 in 1 of Rectified Spirit; 1 in 75 of Proof Spirit.

1 lb. of fruit yields about 42 grs. of Oil.

Used to render medicines more palatable, and prevent griping.

Dose.—1 to 4 minims in pill or emulsion.

(U.S.; not in the other Pharmacopœias.)

Contained in Syrupus Sennæ.

Not Official.

COTO.

A bark from Bolivia—origin unknown.

It contains a bitter principle, Cotoin, sparingly soluble in cold Water, soluble in Alcohol.

Paracotoin is obtained from an allied bark, which has similar properties.

Medicinal Properties.—A remedy in chronic diarrhœa.

Preparation.

TINCTURA COTO (*B.P.C.*).—Coto Bark bruised 1; Rectified Spirit 10: macerate seven days, press, filter, and add Rectified Spirit to make 10.

Dose.—10 to 30 minims.

CREASOTUM.

CREASOTE.

A strongly refracting liquid, colourless, or very slightly yellow, with a peculiar odour. A product of the distillation of Wood Tar.

The two chief constituents of Creasote are Guiacol and Creosol, the first of which predominates in some specimens and the second in others. In Rhenish Creasote Guiacol predominates, while a sample of Morson's Creasote from "Stockholm tar," examined by the author, boiled at about 217° C., and consisted chiefly of Creosol.—*Allen.*

It preserves animal substances from decay, from which property its name is derived. It is to the presence of this substance that the process of smoking hams owes its efficacy.

B.P. sp. g. 1·071, but according to Allen the density of Creasote varies between 1·040 and 1·087. Boils about 400° F. (204°·4 C.).

Solubility.—About 1 in 400 of Water; in all proportions of Rectified Spirit, Absolute Alcohol, Ether, and Glacial Acetic Acid, but separates on the addition of water; clear with $\frac{1}{10}$th of its volume of Chloroform, Benzol, or Benzin, milky with more.

Tests.—Dropped on white filtering-paper, and exposed to a heat of 212° F. (100° C.), it leaves no translucent stain. It does not coagulate Albumen or Collodion. It is not solidified by the cold produced by the mixture of Hydrochloric Acid and Sulphate of Sodium. It turns the plane of a ray of polarized light to the right, whereas Carbolic Acid does not affect polarization. It is insoluble in Glycerine, whereas Carbolic Acid is very soluble. If an equal volume of Glycerine and of Creasote be shaken together, they will afterwards separate and both be perfectly bright; if, however, Carbolic Acid be present the Glycerine is turbid; and if in sufficient quantity, the so-called Creasote is dissolved. An alcoholic solution (1 per cent.), with a drop of a dilute neutral solution of Ferric Chloride, yields a green coloration, changing to reddish brown, and, unless the mixture is very dilute, gives a reddish-brown precipitate.

(Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Port., Russ., Span., Swiss and U.S.; not in Norw. or Swed.)

Medicinal Properties.—Astringent, narcotic, styptic, antiseptic, and escharotic. Given internally for chronic gonorrhœa and gleet, for arresting nausea in hysteria and pregnancy, and for obstinate sea-sickness. It has been given with advantage in malignant cholera and cholera infantum, and bleeding from the intestines. It allays thirst and craving for food in diabetes. One drachm in 15 or 20 oz. of water for a **gargle** in obstinate salivation. 1 drop to 1 oz. of water is **injected** into the bladder to obviate the putrid odour of the urine.

Externally used, in the proportion of 1 drop to 1 drm. for a **lotion**, to eruptions of a scaly character, to burns and chilblains, to erysipelas of the face, with swelling and pain; toothache, when depending on caries, is relieved by its application. The Vapor Creasoti is used as an inhalation in bronchitis and in chronic congestion of the larynx.

One drop of Creasote at bedtime every night for juvenile incontinence of urine (*B.M.J.* '87, i. 809). In phthisis 5 minims in **capsules** four times a day *after meals* (*B.M.J.* '88, i. 548). In phthisis 3 drops in 24 hours (*L.* '88, i. 187). In phthisis 8 minims of 3 per cent. **solution** in Almond Oil injected into the lungs (*L.* '88, i. 643). In diabetes 4 drops daily increased to 10 drops (*L.* '89, i. 702).

Dose.—1 to 3 minims, diluted with weak mucilage (½ oz. to each minim); or in a pill with crumb of bread.

When prescribed in pills with Oxide of Silver, the mass will take fire unless the oxide be first mixed with some inert powder such as Kaolin.

Preparations.

MISTURA CREASOTI.

Creasote, 15 minims; Glacial Acetic Acid, 15 minims; Spirit of Juniper, ½ drm.; Syrup, 1 oz.; Distilled Water, 15 oz.: mix the Creasote with the Acetic Acid, gradually add the Water, and lastly the Syrup and Spirit of Juniper. =(1 in 516).

Creasote and Glacial Acetic Acid are reduced from 16 to 15 minims.

A good mode of administering Creasote, its unpleasant taste being concealed by the Juniper.

It dissolves in the Water without the aid of the Acid.

Mucilage will render Creasote emulsive with water.

Dose.—1 to 2 oz.

(Not in the other Pharmacopœias.)

UNGUENTUM CREASOTI.

Creasote, 1; Simple Ointment, 8: mix. =(about 1 in 9)

(Not in the other Pharmacopœias.)

Employed in mild cases of ringworm.

VAPOR CREASOTI.—INHALATION.

Creasote, 12 minims; boiling Water, 8 oz.: mix the creasote and water in an apparatus so arranged that air may be made to pass through the solution for inhalation.

Boiling Water is too hot, the best temperature for inhalation is 140° F.

(Not in the other Pharmacopœias.)

Not Official.

AQUA CREASOTI.—U.S. Creasote 1, Water 99; Austr. and Swiss, 1 and 100; Span. 1 in 173: all by weight.

MISTURA CREASOTI C. OPIO.—Creasote, 1 minim; Tincture of Opium, 2 minims; Spirit of Chloroform, 15 minims; Glycerine, 1 drm.; Water to 1 oz.—*Chest Hospital.*

Creasote, 1 minim; Tincture of Opium, 3 minims; Syrup of Orange, 30 minims; Mucilage, 1 drm.; Cinnamon Water to 1 oz.—*Consumption Hospital.*

GUAIACOL.—A colourless liquid, soluble in Alcohol, Ether, and fixed oils; slightly soluble in water. As it is acted upon by light it should be kept in non-actinic bottles. It is given in Cod Liver Oil, also in weak Spirit.

As this is a very large constituent of Beech Creasote, 60 to 90 p.c., it has been used in the place of Creasote in the treatment of phthisis.

Guiacol can also be obtained from Guaiacum.

CRETA.

CHALK.

Native friable Carbonate of Calcium. Used for producing Carbonic Acid Gas.

Chalk cliffs are remarkably absorbent of moisture, and cesspools even, made in the chalk, are always found dry.

In the form of whiting, chalk can be obtained in almost every house; when mixed with water to the consistence of cream, it is an excellent application for burns.

(Austr. and Span.; not in the others.)

CRETA PRÆPARATA.

PREPARED CHALK.

Carbonate of Calcium, $CaCO_3$, nearly pure, eq. 100.

Chalk freed from most of its impurities by elutriation, and afterwards dried in small cones.

Insoluble in Water.

Tests.—Almost entirely soluble in Diluted Hydrochloric Acid with effervescence. This solution, when supersaturated with Solution of Ammonia, gives a copious white precipitate on the addition of Oxalate of Ammonium. The salt formed by dissolving the Prepared Chalk in Hydrochloric Acid, if rendered neutral by evaporation to dryness and then redissolved in water, gives only a very scanty precipitate on the addition of Saccharated Solution of Lime (absence, or only a trace, of Alumina, Magnesia, Ferric Oxide, or Phosphates).

(Austr., Belg., Fr., Hung., Norw., Port., Russ., Span., Swed. and U.S.; not in the others.)

Medicinal Properties.—It is astringent and antacid. Combined with other astringents and aromatics, it is used in diarrhœa accompanied with acidity. One of the best antidotes for Oxalic Acid. Has been recommended in rachitis and in scrofulous affections. Used externally to burns and ulcers.

Prescribed in powder or suspended in mucilage.

Dose.—10 to 60 grs.

Contained in Hydrargyrum cum Cretâ.

Incompatibles.—All Acids and Sulphates.

Preparations.

MISTURA CRETÆ.

Prepared Chalk, 1; Gum Acacia, in powder, 1; Syrup, 2; Cinnamon Water, 30: mix by trituration. =(1 in 34).

Dose.—1 to 2 oz. with astringent tinctures and opium.

(Port., Carbonate of Lime 3, Gum Arabic 3, Syrup of Cinnamon 10, Water 84; U.S., Prepared Chalk 6, Acacia 4, Sugar 10, Cinnamon Water 40, Water 40; not in the others.)

Care should be taken to use the *Prepared* Chalk, as directed; the Precipitated Chalk has a crystalline character, and is said to occasion irritation of the bowels.

PULVIS CRETÆ AROMATICUS.

Prepared Chalk, 11; Cinnamon, 4; Nutmeg, 3; Saffron, 3; Cloves, 1½; Cardamom Seeds, 1; Refined Sugar, 25; all in powder: mix.

Dose.—10 to 60 grs. =(about 1 Chalk in 4½).

PULVIS CRETÆ AROMATICUS CUM OPIO.

Aromatic Powder of Chalk, 39; Opium, in powder, 1: mix thoroughly and pass through a sieve. =(1 Opium in 40).

Dose.—10 to 40 grs.

Not Official.

CHOLERA MIXTURE.—Aromatic Powder, 3 drms.; Sp. Sal Volatile. 3 drms.: Tincture of Catechu, 10 drms.; Compound Tincture of Cardamoms, 6 drms.; Tincture of Opium, 1 drm.; Chalk Mixture to make 20 oz.

This mixture was proposed by the Board of Health during the prevalence of cholera, and is useful in all cases of diarrhœa.

Dose.—1 oz. for an adult, ½ oz. for a child twelve years old, ¼ oz. for seven years old, after each liquid motion.

UNGUENTUM CRETÆ.—Prepared Chalk, 1; Spermaceti Ointment, 4: mix.

CROCUS.

SAFFRON.

The stigmas and top of the style of *Crocus sativus*, dried.

Imported from Spain, France, and Italy.

Tests.—When rubbed on the moistened finger it tinges it an intense orange-yellow. Pressed between the folds of filtering-paper it leaves no oily stain. Concentrated Sulphuric Acid instantly changes its colour to indigo-blue, which soon disappears. When added to warm water it colours the liquid orange-yellow, but should not deposit any white or coloured powder.

(In all the Pharmacopœias; Fr., Safran.)

Medicinal Properties.—A slightly exhilarating stimulant. Useful for giving colour and flavour to official preparations.

Contained in Decoct. Aloes Comp., Pil. Aloes et Myrrhæ, Pulvis Cretæ Aromaticus, Tinct. Opii Ammoniata, Tinct. Rhei, and Tinct. Cinch. Comp.

Preparation.

TINCTURA CROCI.

Saffron, 1; Proof Spirit, 20: macerate forty-eight hours with 15 of the spirit, agitating occasionally, pack in a percolator, let it drain, and then pour on the remaining spirit; when it ceases to drop, press and add Proof Spirit to make 20. =(1 in 20).

Dose.—½ to 2 drms.

(Belg. and Span., 1 in 5; Dan., Dutch, Fr., Ger., Russ. and Swiss, 1 and 10; U.S., 1 in 10: all by weight. Not in the others.)

Not Official.

GLYCERINUM CROCI.—Saffron 1; Glycerine 20; Proof Spirit 20: mix the Glycerine and the Spirit, and digest in it the Saffron for an hour at a gentle heat, and filter.

This is introduced as a substitute for **Syrupus Croci**, which deposits and loses its colour.

CROTONIS OLEUM.

CROTON OIL.

Syn. OLEUM TIGLII.

The oil expressed in Britain from the seeds of *Croton tiglium*, a native of Hindostan, Ceylon, and the Moluccas. 100 parts of seed yield about 50 of oil.

A brownish yellow liquid. Sp. gr. ·940—·950.

Solubility.—Soluble in Ether, Oil of Turpentine, and Olive Oil; partially soluble in Rectified Spirit.

The solubility of Croton Oil in Absolute Alcohol appears to depend in a great measure on the age of the oil, and the greater or less freshness of the seeds from which it was expressed; as oxidised or resinified oil dissolves the more readily.—*P. J.* '65, i. 382; '78, i. 705; and xviii. 546.

Entirely soluble in Alcohol.—*Brit. Pharm.*

We find that Croton Oil dissolves Absolute Alcohol up to equal parts, but if more Alcohol be added a separation takes place.

Genuine Croton Oil can be separated by Alcohol into two parts, a soluble vesicating principle and an insoluble purgative.—*P.J.* xiv. 446.

Detection of Croton Oil in Mixtures.—Shake the mixture with Alcoholic Potash; separate the alcoholic layer, add dilute acid, and distil off the spirit. Shake the residue with Ether, which separate, and evaporate; the oil thus obtained should produce the characteristic pustular eruption when applied to the skin.—*P.J.* xviii. 547.

(Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Norw., Port., Russ., Span. (Aceite de Grano Tiglii), Swed., Swiss and U.S.)

Medicinal Properties.—A powerful hydragogue purgative, acting with great rapidity. Given in cases of obstinate constipation, and in apoplexy. Useful in dropsy following scarlet fever, in doses of ⅛ to ¼ of a drop, rubbed up with mucilage, syrup, and water. Applied externally as a counter-irritant in rheumatism, gout, neuralgia, glandular and other indolent swellings, and in laryngeal and pulmonary diseases in the form of liniment.

Is an hepatic stimulant of very feeble power.—Dr. Rutherford.

Dose.—⅓ to 1 minim.

In pill with Crumb of Bread, or in combination with Comp. Ext. of Colocynth.

Antidotes.—In case of an overdose which acts as a violent purgative, an emetic of 20 grains of Sulphate of Zinc should be at once administered, followed by mucilaginous fluids and Opium to check the diarrhœa.

Preparation.

LINIMENTUM CROTONIS.

Croton Oil, 1; Oil of Cajuput, 3½; Rectified Spirit, 3½: mix.
=(1 in 8).

(Not in the other Pharmacopœias.)

5 minims to 1 oz. of Olive Oil are used to promote the growth of hair.

Not Official.

CROTON OIL PENCILS.—Croton Oil 2, Cacao Butter 1, White Wax 1: melt together the last two in a water-bath, add the oil, and when nearly cold pour into moulds.

CUBEBA.

CUBEBS.

The unripe fruit of *Piper cubeba,* dried.

Imported from Java.

Note.—False Cubebs possessing acrid and irritant properties having been sold, the following tests should be applied: A decoction of true Cubebs, when cold, gives with solution of Iodine a bright indigo blue. Concentrated Sulphuric Acid applied to crushed Cubebs produces a deep crimson colour with a distinct carmine tint.—*P. J.* xv. 909.

(Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Norw., Port., Russ., Span., Swed., Swiss and U.S.)

Medicinal Properties.—Gently stimulant, with special direction to the urinary organs. Given in gonorrhœa, most safely when the inflammation is confined to the mucous membrane of the urethra. Frequently combined with Copaiba. The Essential Oil in syrup is expectorant, useful in croup, and in diphtheritic sore throat.

The Tincture is given with an equal quantity of Tincture of Orange to cover the taste.

Dose.—For gonorrhœa 30 to 120 grs. of the powder, wrapped in moistened wafer-paper, three or four times a day. In other cases the dose may be reduced to 10 grs.

Lozenges are made, and called bronchial troches.

Preparations.

OLEO-RESINA CUBEBÆ.

Percolate Cubebs in coarse powder with Ether, slowly, until the liquor passes colourless. Let the Ether evaporate from the liquor, at first spontaneously and then over a water bath, or recover it by distillation; and transfer the residue to a closed vessel, letting it stand until waxy or crystalline matter ceases to be deposited. Decant the Oleo-Resin and preserve it in a well-stoppered bottle.

Dose.—5 to 30 minims.

(U.S., Extractum Cubebarum, Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Russ. and Swiss; not in the others.)

OLEUM CUBEBÆ.

The Oil, distilled in Britain.

Sp. g. (several samples taken) ·907 to ·930.

Solubility.—1 in 18 of Rectified Spirit, in all proportions of Absolute Alcohol.

Dose.—5 to 20 minims, suspended in Water by means of Mucilage and Sugar.

(Port. (sp. g. ·929); Russ. (sp. g. ·900—·930); Span. and U.S. (sp. g. about ·920); not in the others.)

TINCTURE CUBEBÆ.

Cubebs, in powder, 1; Rectified Spirit, 8: macerate forty-eight hours with 6 of the spirit, agitating occasionally, pack in a percolator, and let it drain; pour on the remaining spirit, and when it ceases to drop, press and add Rectified Spirit to make 8. =(1 in 8).

Dose.—$\frac{1}{2}$ to 2 drms.

(Fr., 1 and 5; U.S., 1 in 10; not in the other Pharmacopœias.)

Not Official.

EXTRACTUM CUBEBÆ FLUIDUM (U.S.).—Cubebs in No. 60 Powder, 100 parts, percolated with Alcohol (94 p. c.) until the cubebs are exhausted, reserve the first 90 parts of percolate, and evaporate the remainder to a soft extract, dissolve this in the reserved portion and add sufficient Alcohol to make 100 parts.

Dose.—30 to 60 minims.

CUPRUM.

COPPER.

Cu, eq. 63·5.

Sp. g. 8·9: fuses about 2000° F. Copper, or Venus of the alchemists, has been employed from the earliest ages, and previous to the discovery of malleable iron was the principal ingredient in the formation of domestic utensils and instruments of war. It takes its name from the island of Cyprus, where it was wrought by the Greeks. The purest Copper is that which is deposited by electricity.

Copper wire about No. 25 gauge, or about ·02 inch, is used for preparing Spiritus Ætheris Nitrosi.

(Span. ; not in the others.)

CUPRI NITRAS.

NITRATE OF COPPER.

$Cu(NO_3)_2, 3H_2O$, eq. 241·5.

Deep blue prismatic crystals, very deliquescent.

With one-third of its weight of Water, it forms at a temperature below 70° F. (21°·1 C.) tabular crystals, $Cu(NO_3)_2, 6H_2O$. With a very little more Water, added directly or absorbed from the air, it yields a styptic, caustic, corrosive fluid.

Solubility.—2 in 1 of Water; 2 in 1 of Rectified Spirit.

Tests.—The diluted aqueous solution is only faintly acid to Litmus; gives a maroon-red precipitate with Ferrocyanide of Potassium; affords a violet-blue solution with excess of Ammonia; and on the addition of 2 or 3 crystals of Sulphate of Iron and a few drops of Sulphuric Acid yields a black zone round the crystals.

(Not in the other Pharmacopœias.)

Not Official.

CUPRI SUBACETAS.

Syn. Ærugo. Verdigris.

Pale green powder or masses, partly crystalline.

When treated with water about 50 p. c. dissolves as Acetate of Copper, leaving an insoluble basic acetate.

(Belg., Dan., Fr., Port., Russ. and Span. (Cardenillo) ; not in the others.)

Medicinal Properties.—Used as a stimulant to foul and indolent ulcers, also as an escharotic.

LINIMENTUM ÆRUGINIS (*P.L.*).—Made by dissolving Verdigris, 1, in Vinegar, 7, adding Honey, 14, and boiling down to a proper consistence.

This preparation, with different proportions, also occurs in Belg. Fr. Port. Span. and Swiss. Most of them direct that the preparation shall be boiled until it assumes a red colour, which indicates that the Copper Acetate has been reduced.

Unless the object be to apply Oxide of Copper mixed with Honey, a better preparation might be made by dissolving Acetate of Copper in Glycerine.

CUPRI ACETAS.—Deep green, prismatic crystals.

Solubility.—1 in 15 of Water, 1 in 300 of Rectified Spirit, 1 in 112 of Glycerine.

(Swed., Swiss and U.S. ; not in the others.)

Medicinal Properties.—Similar to the Subacetate, but more definite when required for solution in water.

CUPRI SULPHAS.

SULPHATE OF COPPER.

$CuSO_4.5H_2O$, eq. 249·5.

In oblique prismatic crystals of a clear blue colour.

Solubility.—1 in 3 of Water, 2 in 1 of Water (at 212° F.); insoluble in Rectified Spirit; 1 in 2½ of Glycerine.

Tests.—An aqueous solution of the salt strongly reddens Litmus; if twice its volume of Solution of Chlorine is added, and then treated with an excess of Solution of Ammonia, it gives a violet-blue solution, leaving nothing undissolved—indicating absence of Iron and other impurities. The aqueous solution gives with Chloride of Barium a white precipitate insoluble in Hydrochloric Acid (Sulphate of Barium), and a maroon-red precipitate with Ferrocyanide of Potassium (Ferrocyanide of Copper).

(Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Norw., Port., Russ., Span., Swed., Swiss and U.S.)

Medicinal Properties.—Astringent, tonic, and emetic. Given in epilepsy and chorea. Recommended also in croup and in chronic diarrhœa. Externally, as a styptic for bleeding surfaces and a stimulant to ulcers, as an escharotic for warts, &c. For **lotions**, in proportions from 2 to 4 grs. to 1 oz.; also 8 grs. to 1 oz. for prurigo genitalium. As an **injection**, to diminish excessive secretion from mucous membranes, especially in cases of prolapsus ani, where it affords permanent relief, the solution should be made 5 grs. to the oz. For urethral **injections**, 1 to 4 grs. in an ounce of water. It is also used in various affections of the eyes when astringent applications are required. Also in some skin affections.

Sulphate of Copper 10 grs., Tincture of Opium 60 mins., Water 4 ozs. This was used as a rectal injection in a bad case of dysentery.—*L.* '89, ii. 739.

Dose.—¼ gr. gradually increased to 2 grs. three times a day, in pill, as a tonic for epilepsy; 10 grs. in 2 oz. of water as a prompt emetic in cases of narcotic poisoning.

Incompatibles.—Alkalies and their Carbonates, Lime Water, Mineral Salts (except the Sulphates), Iodides, and most astringent Vegetables.

Antidotes.—In case of poisoning by Sulphate of Copper, Albumen or White of Egg is the best antidote, followed by Laudanum internally, and Linseed Meal poultices applied to the abdomen.

Not Official.

GUTTÆ CUPRI SULPHATIS (*L.O.H.*).—Sulphate of Copper, 2 grs.; Water to 1 oz.—*King's College Hospital. British Skin. London.*

CUPRI OLEAS.—Dissolve 180 grs. of Sulphate of Copper in 20 ozs. of Distilled Water, then add 20 ozs. of Solution of Oleate of Sodium; heat till the precipitate melts and agglomerates, wash once or twice with boiling Water, collect and dry. When prepared from concentrated Solutions it is much more difficult to free from Soap and adhering salts.

When prepared from Castile Soap, it is very soft and sticky at 130° F. and melts to a clear blue liquid at 160° F., but when prepared from a pure Oleic Acid Soap, it softens and melts about 20 degrees lower.

Medicinal Properties.—It is an excellent antiseptic and antiparasitic agent. When diluted it is especially useful in ringworm.

UNGUENTUM CUPRI OLEATIS.—Oleate of Copper, 1; Lard, 4: melt together, and stir till cold.

Useful in ringworm, hard and horny warts, corns, and bunions.—*B.M.J.* '84, ii. 752.

LAPIS DIVINUS. CUPRUM ALUMINATUM.—Sulphate of Copper, Nitrate of Potash, and Alum, of each equal parts, in powder, fused in a glazed earthen crucible, powdered Camphor, to the extent of $\frac{1}{50}$th part of the whole, being added near the end of the process. When cold, break in pieces and keep in a closely-stoppered bottle. An **eye-wash** may be made of 2 grains to an ounce of distilled water.

(Belg., Dan., Dutch, Fr. (Pierre Divine), Hung., Russ., Span., Swed. and Swiss; not in the others.)

FEHLING'S SOLUTION.—Copper Solution.—Crystallized Sulphate of Copper, 69·28 grammes; Sulphuric Acid, 1 c.c.; Water to 1,000 c.c.

Alkaline Tartrate Solution.—Rochelle Salt, 350 grammes; Caustic Soda, 100 grammes; Water to 1,000 c.c.

When these Solutions are mixed in equal volumes, 1 c.c. is taken to be equal to ·005 grammes of glucose.

PAVY'S SOLUTION.—Crystallized Sulphate of Copper, 34·65 grammes; Rochelle Salt, 173 grammes; Caustic Potash, 160 grammes; Water to 1,000 c.c.

When 120 c.c. of this Solution are mixed with 300 c.c. of Ammonia (sp. g. ·880) and diluted to 1,000 c.c., then 10 c.c. may be taken as equivalent to ·005 grammes of glucose.

For **urine testing** Pavy's Solution is more convenient than Fehling's.

Not Official.

CURARE—WOORARA.

A powerful poison obtained from various species of Strychnos, and used by the Indians in the Northern part of South America for arming the points of their arrows. A brownish black shining brittle resinous mass almost wholly soluble in water, sparingly soluble in absolute alcohol. Different samples vary very much in strength, so that the dose of every parcel has to be arrived at by experiment. It is only used **hypodermically**, and the **solution** 1 grain in 12 minims given in former editions of the "Companion" is now included in B.P.C.

(Fr. and Span.; not in the other Pharmacopœias.)

Medicinal Properties.—It has been used in the treatment of hydrophobia, tetanus, and chorea.

It is not poisonous when swallowed, but is strongly toxic when injected under the skin (Ringer, p. 445.)

Dose.—$\frac{1}{12}$th to $\frac{1}{2}$ grain, but should be used with great care.

An Alkaloid Curarina has been obtained from Curara.

Preparation.

INJECTIO CURARE HYPODERMICA (*B.P.C.*).—Curare 5 grains; powder and make it into a paste with Distilled Water; transfer to a funnel plugged with absorbent wool, and gradually pour upon it Distilled Water until one fluid drachm is obtained. If the injection be required in haste, rub the Curare with 60 minims of Distilled Water, throw on a filter, and when it ceases to drop, pour over the contents of the filter sufficient Distilled Water to produce one fluid drachm.

Dose.—1 to 6 minims.

CUSPARIÆ CORTEX.

CUSPARIA BARK.

Syn. Angustura Bark.

The dried bark of *Galipea cusparia,* from tropical South America.

Two alkaloids, "Cusparine" and "Galipeine," have been extracted from Cusparia Bark. The Sulphate and Hydrochlorate of Cusparine are slightly soluble in Water, the Acetate and Tartrate much more so.—*P.J.* xiv. 423.

Test.—The inner surface touched with Nitric Acid does not become an arterial blood-red colour.

Note.—Strychnos Bark, for which this test was introduced, contains Brucia, which becomes blood-red by contact with Nitric Acid; but this bark is now so scarce that it is difficult to obtain even a specimen of it.

(Belg., Fr., Port. and Span., Angustura; not in the others.)

Medicinal Properties.—An aromatic tonic. Used in intermittent fever, dysentery, and in convalescence from acute diseases. Aromatics are generally combined with it, to prevent nausea.

Dose.—Of the powder, 10 to 40 grs.

Preparation.

INFUSUM CUSPARIÆ.

Cusparia Bark, in No. 40 powder, 1; Distilled Water at 120° F. (48°·9 C.), 20: infuse one hour and strain. =(1 in 20).

Time reduced from 2 hours to 1 hour.

Dose.—1 to 2 oz.

(Not in the other Pharmacopœias.)

Incompatibles.—Mineral Acids, Perchloride of Iron, and other Metallic Salts.

CUSSO.

KOUSSO.

The dried panicles (chiefly of the female flowers) of *Hagenia Abyssinica*, from Abyssinia.

(Austr., Dutch, Ger. and Swiss, Koso; Belg., Fr. and Port., Cousso; Dan., Hung., Norw. and Swed., Kusso; Span., Couso; Russ. and U.S., Brayera.)

Medicinal Properties.—Anthelmintic. Especially useful for tænia.

Dose.—$\frac{1}{4}$ to $\frac{1}{2}$ oz.

Preparation.

INFUSUM CUSSO.

Kousso, in coarse powder, 1; boiling Distilled Water, 16: infuse fifteen minutes, without straining. =(1 in 16)

Dose.—4 to 8 oz.

(Fr., Apozème de Cousso about 1 in 8; Span. (Inf. de Couso), 1 in 11$\frac{1}{2}$; U.S. (Inf. Brayeræ), 6 in 100; not in the other Pharmacopœias.)

Not Official.

CYDONIUM.

QUINCE SEED.

The seeds of *Cydonia vulgaris*.

Their coriaceous envelope abounds in mucilage.

(Austr., Belg., Dan., Dutch, Fr. (Coing), Norw., Port. (Marmelo), Russ., Span. (Membrillo), Swed., Swiss and U.S.; not in Ger. or Hung.)

Medicinal Properties.—Demulcent. The decoction is used externally for cracks in the skin. A nice adjunct to eye-lotions in cases of irritation and inflammation.

Preparations.

DECOCTUM CYDONII.—Quince Seed, 1; Distilled Water, 80: boil over a slow fire for ten minutes, and strain.

MUCILAGO CYDONII, by cold maceration.—Austr., 1 in 25; Belg. and Port., 1 in 100; Dan., Norw., Russ., Swed., Swiss, and U.S., 1 in 50; Fr., 1 in 10; Span., 1 in 46; not in Dutch, Ger., or Hung.

Not Official.

DAMIANA.

The leaves of a species of *Turnera*, from Mexico and California.

Contains a bitter substance, resins, and a volatile oil.

Medicinal Properties.—Tonic, diuretic, and aphrodisiac.

Preparations.

EXTRACTUM DAMIANÆ LIQUIDUM.—Damiana leaves exhausted with Proof Spirit so that 1 of fluid will represent 1 of the drug.

Dose.—30 to 60 minims.

EXTRACTUM DAMIANÆ.—The above evaporated to a soft extract.

Dose.—5 to 10 grains.

DECOCTA.

DECOCTIONS.

The following are the Decoctions of the British Pharmacopœia (to be boiled in covered vessels), the formulas of which will be found under the names of the substances from which they are prepared:—

	Proportion of active ingredients to the whole.	Dose.
DECOCTUM ALOES COMPOSITUM . .	1 in 100.	½ to 2 oz.
DECOCTUM CETRARIÆ	1 in 20.	1 to 4 „
DECOCTUM CINCHONÆ	1 in 16.	1 to 2 „
DECOCTUM GRANATI RADICIS . . .	1 in 10.	2 to 4 „
DECOCTUM HÆMATOXYLI	1 in 20.	1 to 2 „
DECOCTUM HORDEI	1 in 10.	1 to 4 „
DECOCTUM PAPAVERIS	1 in 10.	
DECOCTUM PAREIRÆ	1 in 16.	1 to 2 „
DECOCTUM QUERCÛS	1 in 16.	1 to 2 „
DECOCTUM SARSÆ	1 in 8.	2 to 10 „
DECOCTUM SARSÆ COMPOSITUM . .	1 in 8.	2 to 10 „
DECOCTUM SCOPARII	1 in 20.	2 to 4 „
DECOCTUM TARAXACI	1 in 20.	2 to 4 „

Decoctions not official are enumerated in the Index.

U.S. gives a general formula for Decoctions: pour 10 of cold Water upon 1 of the substance, cover and boil for fifteen minutes, then cool to about 113° F. (45° C.), strain, and pour over the strainer enough cold Water to make the product weigh 100.

Ger.: pour cold Water upon the substances in a suitable vessel and expose for half an hour with occasional agitation to the steam from boiling Water on a water bath, and strain while still warm with expression; 10 of strained product should be obtained from 1 of substance.

U.S. and Ger. state that in Decoctions of energetic substances the strength should be specially prescribed by the physician.

DIGITALIS FOLIA.

FOXGLOVE LEAVES.

The leaves of *Digitalis purpurea* (Foxglove), gathered from wild British plants of the second year's growth, when about two-thirds of the flowers are expanded, carefully dried.

Taste very bitter and unpleasant.

(Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Norw., Port. (Dedaleira), Russ., Span. (Digital), Swed., Swiss, and U.S.)

Medicinal Properties.—Cardiac tonic, specially useful in mitral disease. Sedative and diuretic, useful in acute dropsy with cardiac weakness. Has been recommended in prostration from fever; in delirium tremens; in spermatorrhœa; also for the relief of hæmorrhage. It is cumulative in action, and requires caution.

Dose.—$\frac{1}{2}$ to 2 grs. of the powdered leaf.

Incompatibles.—Sulphate and Tinct. Perchloride of Iron, preparations of Cinchona, Acetate of Lead.

Antidotes.—In case of an overdose, a recumbent posture is of paramount importance; and after the stomach has been emptied, 20 grs. of Tannic or Gallic Acid in hot water given frequently, or hot strong tea or coffee; stimulants externally and internally should be employed.

Preparations.

INFUSUM DIGITALIS.

Foxglove leaves, dried, 28 grs.; boiling Distilled Water, 10 oz.; infuse fifteen minutes and strain. =(1 in 156).

Leaves reduced from 30 to 28 grs., and time from 1 hour to 15 minutes.

Dose.—$\frac{1}{4}$ to $\frac{1}{2}$ oz.

(Dan. and Swed., 1 in 100; Dutch and Port., 1 in 200; Span., 1 in 345; U.S., with Cinnamon, 3 in 200; not in the others.)

TINCTURA DIGITALIS.

Foxglove leaves, in No. 20 powder, 1; Proof Spirit, 8: macerate forty-eight hours with 6 of spirit, agitating occasionally, pack in a percolator, and let it drain, then pour on the remaining spirit; when it ceases to drop, press and add Proof Spirit to make 8. =(1 in 8).

Dose.—10 to 30 minims: but in cases of delirium tremens, 1 drm. every three hours. Two or even three drms. have been given in cases carefully watched.—*Pr.* xxvii. 373.

(Austr., 1 in 10; Belg., Fr., Hung., Port., Span. and Swiss, 1 in 5; Dan., Dutch, Ger., Norw., Russ. and Swed., 1 and 10; U.S., 15 in 100. Also Belg., Fr., Port. and Span., 1 fresh leaves. 1 Spirit; Fr. and Span., with Ether 1 dried leaves and 5; Dan., Port. and Russ., with Spirit of Ether 1 dried leaves and 10: all by weight.)

Not Official.

PILULA DIGITALIS COMP.—Digitalis Powder $\frac{1}{2}$ gr.; Squill, 1 gr.; Blue Pill, 3 grs.: in one pill.—*St. George's.*

SUCCUS DIGITALIS.—The Expressed Juice, 3; Rectified Spirit, 1.

This preparation may be given for a longer period than the tincture without causing nausea.

Dose.—5 to 10 minims.

DIGITALIN.—Under this title the following substances have been used which differ considerably in their physical and medicinal properties.

1. "HOMOLLES."—Amorphous, *slightly soluble in water* and in Ether, freely soluble in Alcohol and Chloroform.

(Official in Belg., Fr., Port., Russ., Span. and Swiss; formerly in Brit.)

Dose.—$\frac{1}{60}$ to $\frac{1}{30}$ grain.

2. "NATIVELLES."—Crystalline, *insoluble in water* and Ether, freely soluble in Chloroform.

(Official in Fr. and Span.)

3. "GERMAN."—Amorphous, *readily soluble in water* and Alcohol, almost insoluble in Chloroform and Ether.

Not Official.

DUBOISIA MYOPOROIDES.

A plant indigenous in N.S. Wales and Queensland; it has been classed in the order *Solanaceæ.*

(Span.; not in the other Pharmacopœias)

Dr. Ringer's experiments show that the physiological action of the extract is apparently identical with Atropine. Mr. Tweedy has used it as an application to the eye in all cases in which Atropine was indicated.

Ladenburg examined a sample of Sulphate of Duboisine received from Merck, and found the Alkaloid to be identical with Hyoscyamine, the Gold-salt melting at 159° C.—*P.J.* '80, x. 790.

Ladenburg some years later examined another sample from the same maker, and found it to be identical with Hyoscin, the Gold-salt melting at 197—198° C.—*P.J.* '87, xvii. 1049.

The identity of Duboisine with any other of the mydriatic alkaloids has not as yet been proved.

Preparations.

DUBOISINÆ SULPHAS.—Amorphous, hygroscopic. Very soluble in Water.

It dilates the pupil; its action is quicker, more powerful, and more transient than Atropine. Its application, however, sometimes causes toxic symptoms.

(Dutch; not in the other Pharmacopœias.)

GUTTÆ DUBOISINÆ SULPHATIS (*L.O.H.*).—Sulphate of Duboisine 1 gr. Distilled Water 1 oz.

Antidotes.—The same as for Atropine.

Not Official.

DUGONG OIL.

An oil obtained in Australia from *Helacore Australis* and *H. Dugong* by boiling the superficial fat. A substitute for Cod-Liver Oil.

Not Official.

DULCAMARA.

The dried young branches of *Solanum dulcamara* (Bittersweet), from indigenous plants which have shed their leaves.

This is now omitted from the British Pharmacopœia.

(Austr., Belg., Dan., Fr. (Douce-amère), Norw., Port. (Doce-amarga), Russ., Span., Swed., Swiss, and U.S.; not in Dutch, Ger. or Hung.)

Medicinal Properties.—Narcotic. Increases the secretions, particularly of the kidneys and skin. Used in cutaneous eruptions, chiefly of a scaly nature, as psoriasis and pityriasis, a decoction being applied externally, at the same time that it is used internally. Also in chronic rheumatism and catarrh.

Preparations.

EXTRACTUM DULCAMARÆ FLUIDUM (U.S.).

1 fl. oz. equals 1 oz. Dulcamara. Prepared with Diluted Alcohol.

Dose.—30 to 60 minims.

INFUSUM DULCAMARÆ.

Dulcamara, 1; boiling Water, 10: infuse one hour.

Dose.—1 to 2 oz.

(Fr. (Tisane), 1 in 50; not in the others.)

SOLANINE.—An Alkaloid obtained from *Solanum nigrum*, *S. dulcamara*, and *S. tuberosum* (Potato plant).

It has been recommended as an analgesic.—*L.M.R.* '86, 496, and '88, 242; *T.G.* '87, 56, and '88, 630; L. '87, ii. 1097.

ECBALLII FRUCTUS.

SQUIRTING CUCUMBER FRUIT.

The fruit very nearly ripe of the Squirting Cucumber, *Ecballium elaterium*, from plants cultivated in Britain.

(Fr., Concombre Sauvage; Port., Pepinos de S. Gregorio; not in the others.)

Preparation.—Elaterium.

ELATERIUM.

ELATERIUM.

Syn. Extractum Elaterii.

A sediment from the expressed juice of the fruit of *Ecballium elaterium*, dried.

The fruit is cut lengthwise, the juice lightly pressed out, strained through a hair sieve, then allowed to deposit; the clear liquor being poured off, the sediment is thrown on a linen strainer to drain, and lastly dried on a porous brick with a gentle heat.

In light, friable, flat or slightly curved, opaque cakes about $\frac{1}{10}$ inch thick.

Tests.—Does not effervesce with acids; yields half its weight to boiling Rectified Spirit. Boiled with Water and the cooled mixture treated with Iodine affords little or no blue colour (absence or only a trace of Starch).

B.P. states that when treated by the method described for Elaterin, it should yield 25 per cent., or not less than 20 per cent., of that substance, but the process is imperfect, and requires modification.

Note.—A sample treated by this method yielded 5·75 per cent.; the same sample exhausted with Chloroform, the solution evaporated, and the residue washed with Ether gave 23·5 per cent. Both products answered the test for Elaterin with Carbolic Acid equally well.

(Port., Extraeto de Pepinos de S. Gregorio; Swed., Elaterium Album; not in the others.)

Medicinal Properties.—A powerful hydragogue cathartic. Especially used in dropsical affections connected with cardiac or renal disease. Its administration in a debilitated state of the system requires caution.

Dose.—To prevent it causing nausea, it may be given with Henbane, and is best given in doses of $\frac{1}{16}$ to $\frac{1}{2}$ gr. till it operates. Mr. Vance gave it with Gamboge in dropsy.

Antidotes.—Emollient and demulcent drinks and enemata, to be followed by small but repeated doses of Opium and the use of the warm bath.

Not Official.

PILULA ELATERII.—Elaterium, $\frac{1}{12}$ gr.; Extract of Henbane, 4 grs.: for 1 pill. (Hydragogue Pill.)—*St. Mary's.*

ELATERINUM.

ELATERIN.

$C_{20}H_{28}O_5$, eq. 348

The active principle of Elaterium. A chemically neutral substance, in small colourless crystals, which have a bitter taste. According to the Pharmacopœia, it may be obtained by exhausting Elaterium with Chloroform, adding Ether to the Chloroformic solution, collecting the precipitate, washing the latter with Ether, and purifying by recrystallisation from Chloroform; but a more correct method is given in our note under Elaterium.

Solubility.—1 in 160 of Rectified Spirit; insoluble in Water.

Tests.—With melted Carbolic Acid it yields a solution which, on the addition of Sulphuric Acid, acquires a crimson colour, rapidly changing to scarlet. It is not precipitated from solution by Tannic Acid, nor by the Salts of Mercury or of Platinum. Heated with access of air it first melts and then burns, leaving no residue.

Dose.—$\frac{1}{40}$ to $\frac{1}{10}$ grain.

(U.S.; not in the others.)

Preparation.

PULVIS ELATERINI COMPOSITUS.

Elaterin, 1; Sugar of Milk, 39: rub them together in a mortar until they are reduced to fine powder and intimately mixed.

Now made with Elaterin instead of Elaterium; strength is about the same as formerly.

Dose.—$\frac{1}{2}$ gr. to 5 grains.

(U.S. (Trituratio), Elaterin, 1; Sugar of Milk, 9; not in the others.)

ELEMI.

MANILA ELEMI.

A concrete resinous exudation, the botanical source of which is undetermined, but is sometimes referred to *Canarium commune.*

It is imported from Manila.

Should have a fragrant, fennel-like odour, and is usually soft and unctuous to the touch, but hardens on keeping.

Solubility.—The greater part is soluble in Rectified Spirit, wholly soluble in Ether.

Brazilian and Yucatan Elemis are Official in some of the Foreign Pharmacopœias.

(Austr., Belg., Dutch, Fr., Port., Russ., Span., and Swiss; not in the others.)

Medicinal Properties.—Analogous to those of Turpentine. For external use only.

Preparation.

UNGUENTUM ELEMI.

Elemi, 1; Simple Ointment, 4: melt, strain, and stir till cold. =(1 in 5).

(Belg. Fr. (Onguent d'Arceus), Russ. Span. and Swiss, 1 of Elemi and 1 of Turpentine in 4 of Ointment; Dutch, 3 of Elemi, 2 of Turpentine, in 10 of Ointment; Port. 2 of Elemi and 1 of Turpentine in 10. Not in the others.)

It has a pleasant odour, and is used to keep open issues and setons.

EMPLASTRA.

PLASTERS.

The Emplastra of the British Pharmacopœia are as follows, the formulas for which will be found under the names of the drugs from which they are prepared:—

	Proportion of active ingredients in the mass.
EMPLASTRUM AMMONIACI CUM HYDRARGYRO	(Mercury) 1 in 5.
EMPLASTRUM BELLADONNÆ	(Alcoholic Extract) 1 in 5.
EMPLASTRUM CALEFACIENS	(Cantharides) about 1 in 25.
EMPLASTRUM CANTHARIDIS	(Cantharides) 1 in 3.
EMPLASTRUM FERRI	(Peroxide of Iron) 1 in 11.
EMPLASTRUM GALBANI	(Galbanum) 1 in 11.
EMPLASTRUM HYDRARGYRI	(Mercury) 1 in 3.

EMPLASTRUM OPII	(Opium) 1 in 10.
EMPLASTRUM PICIS	(Pitch) 1 in 2.
EMPLASTRUM PLUMBI.	
EMPLASTRUM PLUMBI IODIDI	(Iodide of Lead) 1 in 10.
EMPLASTRUM RESINÆ	(Resin) 1 in 9½.
EMPLASTRUM SAPONIS	(Soap) about 1 in 7.
EMPLASTRUM SAPONIS FUSCUM	(Soap) about 1 in 6.

Plasters which are not official are enumerated in the Index.

Not Official.

EMBELIA RIBES.

The Powdered Seeds are used in India as a remedy for tapeworm.—*L.* '87, ii. 199.

Dose.—1 to 4 drachms.

ACIDUM EMBELICUM.—Obtained from the Seeds. It is insoluble in Water, forms Salts with Ammonia, Potash, and Soda.

AMMONII EMBELAS.—A tasteless crystalline Salt, in red needles.

Dose.—3 to 6 grains in Honey or Simple Syrup.—*P.J.*, xix. 305.

ENEMATA.

ENEMAS.

The following are the Enemas of the British Pharmacopœia, the formulas for which will be found under the names of the drugs from which they are prepared :—

	In each Enema.
ENEMA ALOES	40 grs. Aloes.
ENEMA ASAFŒTIDÆ	30 grs. Asafœtida.
ENEMA MAGNESII SULPHATIS	(Catharticum) 1 oz. Sulphate.
ENEMA OPII	½ drm. Tincture.
ENEMA TEREBINTHINÆ	1 oz. Oil.

John Arden, who flourished in the fourteenth century, treated largely with Clysters, and considered salt a necessary and an important ingredient.

ERGOTA.

ERGOT.

The sclerotium (compact mycelium, or spawn) of *Claviceps purpurea*, produced between the pales and replacing the grain of the common rye, *Secale cereale*.*

It has a characteristic odour, which is increased by the addition of solution of Potash.

Yields its virtues to Water and Alcohol. In percolating the powder with Ether, about one-third of its original weight of Oil is extracted.

Tests.—The aqueous infusion has an acid reaction; it is precipitated by Acetate and Subacetate of Lead, Nitrate of Silver, and Tincture of Galls. With Iodine, it does not show evidence of Starch.

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* Ergot is common on grasses, and if it occurs in the pastures where cattle feed, it is said to occasion dry gangrene, causing the cattle to lose their hoofs and horns.

During an epidemic of *Secale cornutum* it was noticed that one of the symptoms of ergot-poisoning was suppression of milk in lactating women. The same result followed in cows that had been fed on meal containing Ergot.—*M.T.* '75, i. 586.

Ergot should be thoroughly dried and kept in closed vessels, as it has a tendency to spoil, partly by oxidation of its oil and partly by the attacks of a mite.

(Austr., Belg., Dan., Dutch, Ger., Hung., Norw., Russ., Swed. and Swiss, Secalo cornutum; Fr. Ergot de Seigle; Port. Cravagem de Centeio; Span. Cornezuelo de Centeno; U.S. Ergota.)

Medicinal Properties.—Produces contraction of the uterus, especially in parturition. Employed in uterine hæmorrhage and floodings, also in hæmoptysis, hæmatemesis, and epistaxis. Useful in amenorrhœa and dysmenorrhœa. In diabetes insipidus, 30 minim doses of the Liquid Extract every three hours.—*L.M.R.* '80, 231, 446, and '81, 12.

In hiccough (*L.* '85, ii. 276); in post-partum hæmorrhage, equal parts Liq. Ergotæ and Acid. Acetic. diluted with Water (*B.M.J.* '88, i. 295, 1148); in the sweats of phthisis (*L.M.R.* '81, 451).

Dose.—20 to 30 grs., infused in boiling water, to cause uterine contraction.

Incompatibles.—Astringents, Metallic Salts.

Preparations.

EXTRACTUM ERGOTÆ LIQUIDUM.

Ergot, crushed, 16; Distilled Water, 120; Rectified Spirit, 6. Digest the Ergot in 80 of the Water for twelve hours: draw off the infusion and repeat the digestion with the remainder of the Water. Press out, strain, and evaporate the liquors by a water bath to 11, and when cold add the spirit. Allow it to stand for an hour to coagulate; filter, and make up the quantity to 16. =(1 in 1).

This is now digested cold, instead of at 160° F., and the percolation with Ether is omitted; there is also less spirit used.

16 oz. of the Liquid Extract evaporated leave $2\frac{1}{4}$ ounces of solid Extract.

B. P. 1867 process yielded 10·32 per cent. of residue dried at 105° C. (221° F.); B. P. 1885 process yielded 11·46 per cent.

Dose.—10 to 60 minims.

(U.S. percolated with diluted Alcohol; not in the others.)

Austr. Belg. Dan. Dutch, Fr. Ger. Hung. Norw. Port. Russ. Span. Swed. and Swiss, have a **solid extract.**

INFUSUM ERGOTÆ.

Ergot, crushed, 1; boiling Distilled Water, 40: infuse half an hour and strain. =(1 in 40).

Should be made fresh on each occasion.

Dose.—1 to 2 oz.; used also as an injection for gleet.

(Not in the other Pharmacopœias.)

TINCTURA ERGOTÆ.

Ergot, finely comminuted, 1; Proof Spirit, 4: macerate forty-eight hours with 3 of the spirit, agitating occasionally, pack in a percolator, let it drain, then pour on the remaining spirit; when it ceases to drop, press, filter, and make up with Proof Spirit to 4. =(1 in 4).

B.P. **Dose.**—5 to 30 minims.

(Belg., Dutch, and Port. 1 and 5; Russ. and Swiss, 1 and 10; not in the others; U.S. Vinum, 15 in 100.)

ERGOTINUM.

Purified Extract of Ergot, commonly called Ergotin.

Evaporate 4 of Liquid Extract of Ergot by a water bath to a syrupy consistence, and when cold mix with 4 of Rectified Spirit. Let it stand half an hour, then filter and evaporate the filtered liquid to the consistence of a soft extract.

Brit. Pharm. **Dose.**—2 to 5 grains.

In pills and for hypodermic injection.

(Austr., Belg., Dan., Dutch, Fr., Hung., Norw., Port., Russ., Span., Swed., and Swiss.)

INJECTIO ERGOTINI HYPODERMICA.

Ergotin 100 grains; Camphor Water 200 grains: dissolve by stirring them together. =(10 in 27).

Dose.—3 to 10 minims for subcutaneous injection.

(Port., Soluto de Ergotino com Glycerino, Ergotin 1, Glycerine 4, Water 5.)

Not Official.

TINCTURA ERGOTÆ AMMONIATA (*B.P.C.*).—Ergot in No. 20 powder, 10 oz.; Aromatic Spirit of Ammonia sufficient to percolate 20 oz.

Dose.—10 to 60 minims.

ACIDUM SCLEROTICUM.—A weak acid obtained from Ergot by Dragendorff. It is used hypodermically $\frac{1}{3}$ to $\frac{3}{4}$ grain dissolved in Distilled Water or Thymol Water. —*P.J.* vi. 1001; *Y.B.P.* '84, 87.

INJECTIO ACIDI SCLEROTICI HYPODERMICA.—Sclerotic Acid Pure, 15 grs.; Glycerine 15 mins.; Water to 60 mins.: dissolve and add 1 per cent. of Carbolic Acid No. 1. **Dose,** 1 to 4 mins.—*London Hosp.*

ERGOTININE.—An alkaloid obtained from Ergot, insoluble in Water, soluble in Alcohol or Chloroform. Used in post-partum hæmorrhage by **hypodermic injection** of 5 to 10 minims of a solution containing $\frac{1}{50}$ grain in 20 minims.—*B.M.J.* '82, ii. 1004.

CORNUTINE.—An alkaloid obtained from Ergot by Dr. Kobert, which, he states, produces uterine contraction.

He does not give the process by which he obtained it.

SPHACELINIC ACID.—A resinous body also separated by Kobert, and stated by him to cause contraction of the uterus.

EXTRACTUM SECALIS CORNUTI CORNUTINO-SPHACELINICUM (KOBERT).—An extract which combines the action of the two above-mentioned bodies. It is prepared by exhausting Ergot with strong Alcohol, and evaporating the liquid to an extract, the fatty oil being removed by Ether.

He does not give the dose of the above, but states that "the extract thus prepared is not well suited for subcutaneous injection," and "the dose cannot be foretold because the proportion of active principles present in Ergot varies exceedingly with the year and the district."—*Pr.* xxxiii., 409, and xxxv., 414.

Not Official.

ERIGERONTIS CANADENSIS OLEUM.

OIL OF CANADA FLEABANE.

A volatile oil distilled from the fresh flowering herb *Erigeron Canadense.*

When rectified, the oil, which is a terpene ($C_{10}H_{16}$), has a sp. g. ·850, and boils at 176° C.

A very pale yellow liquid, with neutral reaction.

(U.S.; not in the others.)

Medicinal Properties.—Diuretic, tonic, and astringent. Chiefly employed for arresting internal hæmorrhage.

Dose.—5 to 10 minims every two or three hours.

Not Official.

ERYTHROPHLÆUM.

CASCA BARK. SASSY BARK.

The bark of the *Erythrophlœum guinense.*
An ordeal bark used in West Africa.
Introduced as a heart tonic in 1877.

Preparations.

TINCTURA ERYTHROPHLÆI (*B.P.C.*).—Casca Bark in No. 20 powder, 2; Rectified Spirit to percolate 20.

Dose.—5 to 10 minims.

ERYTHROPHLÆINÆ HYDROCHLORAS.—Soluble in Water.

The statement that it possessed local anæsthetic properties has given rise to a good deal of discussion, the result of which is not in favour of its use for that purpose.—*B.M.J.* '88, i. 317, 545, 604, 661, 1083; *L.* '88, i. 249, 346.

ESSENTIÆ.

Essentia Anisi.—1 Oil in 5.
Essentia Menthæ Piperitæ.—1 Oil in 5.

EUCALYPTI OLEUM.

OIL OF EUCALYPTUS.

The oil distilled from the fresh leaves of *Eucalyptus globulus, Eucalyptus amygdalina,* and probably other species of Eucalyptus.

Colourless or pale straw-coloured, becoming darker and thicker by exposure. Neutral to Litmus. Sp. g. about ·900

Has an aromatic odour, and a spicy and pungent flavour, leaving a sensation of coldness in the mouth.

The above description, taken from the *British Pharmacopœia,* 1885, is almost word for word the same as that of *U. S. P.*, 1882. It refers to Eucalyptus Oils as a class, but the physical and chemical characters of the oils, obtained from different species, vary so much that some more detailed description is necessary. The distinction between the two principal varieties (the oil from E. globulus, and the oil from E. amygdalina) seems strongly marked. The former has a gravity over ·900 (generally ·915—·925), a weak dextro-rotary power, yields crystallisable Eucalyptol, and contains no Phellandren. The latter has a gravity below ·900 (generally ·880—·890) a lævo-rotary power, yields little or no crystallisable Eucalyptol, and consists largely of Phellandren, which may be recognised by dissolving the oil in twice its volume of Glacial Acetic Acid, and adding a solution of Nitrite of Sodium; Phellandren if present separates as an insoluble Nitrite. A pure Amygdaline Oil solidifies almost instantly; a Globulus Oil, treated in the same way, assumes a green colour, but does not otherwise change. The boiling point of the two oils appears not to differ to any definite extent. No comparative tests seem to have been made as to the therapeutic values of the different varieties.

Solubility.—3 in 1 (or less) of Rectified Spirit, in all proportions of Absolute Alcohol; in Proof Spirit:—E. Globulus, 1 in 38; E. Amygdalina, 1 in 175.

We found at one time that the sp. g. of samples of Oil varied ·881—·886, at another ·927—·935. Some samples of Eucalyptol obtained in England varied ·872—·882; but one obtained from a large distiller in Australia was ·947.

(Belg.; Hung., sp. g. ·914; U.S., sp. g. ·900; not in the others.)

Medicinal Properties.—It is a powerful antiseptic and deodorizer. It has been used in the treatment of wounds and in surgical operations; as an inhalation in cases of diphtheria; and to relieve the cough in chronic bronchitis, phthisis, and asthma. Mixed with Iodoform as an application to hard and soft chancres. Given internally for chronic inflammation of the bladder.

Eucalyptus antiseptic spray in eye operations.—*L.* '86, i. 305.
Inhalation in whooping cough.—*B.M.J.* '86, i. 430.

B.P. **Dose.**—1 to 4 minims.

Preparation.

UNGUENTUM EUCALYPTI.

Oil of Eucalyptus (by weight), 1; Soft Paraffin, 2; Hard Paraffin, 2. Melt the Paraffins together, add the Oil, and stir until cold. =(1 in 5.)

Not Official.

TINCTURA EUCALYPTI (*B.P.C.*).—Eucalyptus Leaves (of the Eucalyptus globulus), in No. 20 powder, 4; Rectified Spirit to percolate 20.

Dose.—15 to 120 minims.

(Belg., Dutch, Fr., Port., Span., and Swiss, 1 and 5; Hung., 1 in 5; not in the others.)

EUCALYPTUS GAUZE.—Contains about 6 per cent. of Eucalyptus Oil.

EUCALYPTUS WOOL and LINT.—Each contains 10 per cent. of the oil.

Not Official.

EUCALYPTOL.

Till recently much doubt was prevalent as to the nature of the commercial product passing under this name; the general opinion being that any Eucalyptus Oil distilling between 175° to 177° C., treated with Potash, and rectified over Chloride of Calcium (according to the original process of Cloez) yielded Eucalyptol. After much involved controversy the following three commercial varieties have been defined:—

Eucalyptol Crystallizable.—A definite chemical body ($C_{10}H_{18}O$), obtainable, by a freezing process of purification, from the Oil of Eucalyptus globulus. It is liquid at ordinary temperatures, but crystallizes about 0° C. (32° F.). It has sp. g. ·923 and has no action on polarised light. It is identical with an oxidised compound obtained from Oil of Cajeput and a number of other essential oils.

Eucalyptol (Globulus) is generally understood commercially to be the product obtained by purification and rectification of the oil; it does not crystallize when cooled far below 0° C., but contains a large proportion of *Crystallizable Eucalyptol.*

Eucalyptol (Amygdalina) obtained by rectification of the oil from E. amygdalina consists mainly of Phellandren, having the formula $C_{10}H_{16}$, and a sp. g. about ·886. Whether this oil, when unmixed with oils from other species, contains any crystallizable Eucalyptol is yet undecided, but in any case the quantity is probably very small.

Not Official.

EUONYMUS.

WAHOO BARK.

The bark of *Euonymus atropurpureus.*

(U.S.; not in the others.)

Medicinal Properties.—Cholagogue and laxative.

Preparations.

EUONYMIN.—Attention has lately been directed to this drug on account of the variety and extent of the adulterations practised. Instead of being as was supposed a proximate principle embodying the medicinal properties of the plant, commercial Euonymin has been discovered to be an aqueous or alcoholic extract dried up with Phosphate of Calcium, Lycopodium, Sugar of Milk, finely powdered bark, Magnesia, Baryta, and Alumina. The two latter were apparently precipitated in the Euonymin solution, to carry down the chlorophyll in making the green variety. The amount of added material constituted 30 to 60 per cent. of the drug.

We find that a powdered spirituous extract represents the full medicinal activity of the bark and that Magnesia is the least objectionable as well as the most effective desiccating material. The total ash should in no case exceed 15 per cent. (with much less than this the powder is inclined to cake), and be readily soluble in dilute acids. The Euonymin should yield at least 85 per cent. of its weight to Proof Spirit and be completely soluble with the addition of Hydrochloric Acid. Comparative experiments showed that an extract prepared from root-bark was distinctly stronger than one prepared from stem-bark, using the same menstruum.

This Euonymin possesses advantages over the fluid preparations in that it can be prescribed in pills, which has been the usual method of administration.

Dose.—1 to 3 grs. in a pill.

Is a powerful hepatic, but feeble intestinal stimulant.—Dr. Rutherford.

EXTRACTUM EUONYMI (*U.S.*).—Percolate Euonymus (in No. 30 powder) with Diluted Alcohol until exhausted, distil off the Alcohol and evaporate over a water-bath to a pilular consistence; lastly add 5 per cent. of Glycerine.

TINCTURA EUONYMI (*B.P.C.*).—Euonymus bark in No. 20 powder, 4; Rectified Spirit sufficient to percolate 20.

Dose.—10 to 40 minims.

Not Official.

EUPHORBIA PILULIFERA.

A plant growing in Queensland and Tropical America. The herb is collected when in flower and carefully dried.

It has been recommended in asthma and bronchial affections.—*L.* '85, ii. 86; *T.G.* '85, 92.

Preparations.

EXTRACTUM EUPHORBIÆ PILULIFERÆ.—Obtained by the evaporation of the Proof Spirit Tincture.

Dose.—$\frac{1}{2}$ to 1 grain.

TINCTURA EUPHORBIÆ PILULIFERÆ (*B.P.C.*).—Euphorbia in No. 20 powder 4; Proof Spirit to percolate 20.

Dose.—10 to 30 minims.

Not Official.

EXALGINE.

METHYLACETANILIDE.

This crystalline substance, which was described by Hofmann in 1874, has been recently submitted to physiological experiment and found to possess analgesic and, to a less degree, antipyretic properties. It has been recommended in neuralgia.

Dose.—3 to 6 grains.

Solubility.—Sparingly in Water, but readily in Proof Spirit.—*L.* '89, i. 658; *P.J.* xix. 781, 861; *T.G.* '89, 339, 534, 746, 797.

EXTRACTA.

EXTRACTS.

The following is a complete list of the Extracts of the British

Pharmacopœia, the mode of preparation for which will be found under the names of the drugs from which they are prepared :—

B.P. DOSE.	EXTRACTUM.	MENSTRUUM.
¼ to 1 gr.	ACONITI (juice of fresh herb)	
2 to 6 grs.	ALOES BARBADENSIS.	Boiling water.
2 to 6 grs.	ALOES SOCOTRINÆ.	Boiling water.
2 to 10 grs.	ANTHEMIDIS (dried flowers and oil).	Boiling water.
1 to 2 drms.	BELÆ LIQUIDUM (dried fruits).	Cold water.
¼ to 1 gr.	BELLADONNÆ (juice of fresh herb).	
$\frac{1}{16}$ to ¼ gr.	BELLADONNÆ ALCOHOLIC. (root).	Rectified spirit.
2 to 10 grs.	CALUMBÆ (dried root).	Proof spirit.
¼ to 1 gr.	CANNABIS INDICÆ (dried herb).	Rectified spirit.
2 to 8 grs.	CASCARÆ SAGRADÆ (dried bark).	Proof spirit and water.
½ to 2 drms.	CASCARÆ SAGRADÆ LIQUIDUM.	Boiling water.
3 to 30 mins.	CIMICIFUGÆ LIQUIDUM.	Rectified spirit.
5 to 10 mins.	CINCHONÆ LIQUIDUM (Red bark).	Hydrochloric acid, glycerine and water.
½ to 2 drms.	COCÆ LIQUIDUM (dried leaves).	Proof spirit.
½ to 2 grs.	COLCHICI (juice of fresh corms).	
½ to 2 grs.	COLCHICI ACETICUM (fresh corms).	Acetic Acid.
3 to 10 grs.	COLOCYNTHIDIS COMPOSITUM.	Proof spirit.
2 to 6 grs.	CONII (juice of fresh herb).	
10 to 30 mins.	ERGOTÆ LIQUIDUM (dried Ergot).	Cold water.
15 to 30 mins.	FILICIS LIQUIDUM (dried rhizome).	Ether.
½ to 2 grs.	GELSEMII ALCOHOLICUM (rhizome).	Rectified spirit.
2 to 10 grs.	GENTIANÆ (dried root).	Boiling water.
5 to 60 grs.	GLYCYRRHIZÆ (driedroot).	Cold water.
1 drm.	GLYCYRRHIZÆ LIQUIDUM.	Cold water.
10 to 30 grs.	HÆMATOXYLI (chips).	Boiling water.
5 to 10 grs.	HYOSCYAMI (juice of fresh herb).	
2 to 10 grs.	JABORANDI (dried leaves).	Proof spirit.
5 to 15 grs.	JALAPÆ (dried root).	Spirit and cold water.
5 to 20 grs.	KRAMERIÆ (dried root).	Cold water.
5 to 15 grs.	LACTUCÆ (juice of fresh flowering herb).	
5 to 15 grs.	LUPULI (dried).	Spirit and boiling water.
	MEZEREI ÆTHEREUM (dried bark).	Spirit and Ether.
¼ to 1 gr.	NUCIS VOMICÆ (standardised).	Spirit and water mixed.
½ to 2 grs.	OPII (standardised)	Cold water.
10 to 40 mins.	OPII LIQUIDUM (standardised).	Cold water and spirit.
2 to 5 grs.	PAPAVERIS (dried capsules).	Boiling water.
10 to 30 grs.	PAREIRÆ (dried root).	Boiling water.
½ to 2 drms.	PAREIRÆ LIQUIDUM (extract).	Water and spirit.
$\frac{1}{16}$ to ¼ gr.	PHYSOSTIGMATIS (Calabar bean).	Rectified spirit.
3 to 5 grs.	QUASSIÆ (chips).	Cold water.
15 to 60 grs.	RHAMNI FRANGULÆ (dried bark).	Proof spirit and water.
1 to 4 drms.	RHAMNI FRANGULÆ LIQUIDUM.	Boiling water.
5 to 15 grs.	RHEI (dried root).	Proof spirit and water.
2 to 4 drms.	SARSÆ LIQUIDUM (root).	Proof spirit, water (at 160° F.), and sugar.
¼ to ½ gr.	STRAMONII (dried seeds).	Ether (rejected) and proof spirit.

B.P. DOSE.	EXTRACTUM.	MENSTRUUM.
5 to 30 grs.	TARAXACI (juice of fresh root).	
$\frac{1}{4}$ to 2 drms.	TARAXACI LIQUIDUM (dried root).	Proof spirit and water.

Extracts which are not official are enumerated in the Index.

Extracts are to be found in Pharmacopœias of very early date, and they are highly satisfactory preparations, as they represent very completely the properties of the plant from which they are made. They are moreover, as a general rule, well adapted for pills—a convenient form and least objectionable to the patient.

Although the extracts from the fresh medicinal plants have been so long in use, many erroneous notions have prevailed as to the best mode of making them. All previous Pharmacopœias order the *leaves* only to be employed, under the idea that the properties of the plant were most highly developed in those organs. These leaves, again, were directed to be gathered for medicinal use before the flowering of the plant. The Author, who had been occupied in this branch of pharmacy for nearly fifty years, was entirely opposed to this plan both as to the parts employed and the time of gathering. In a paper on "Preserved Juices," read at the Pharmaceutical Society in 1841,* he stated his opinion that the plant was in the highest state of perfection when fully one-third of the flowers were blown. The main object of the growth and inflorescence of a plant is the production of seed, and the whole vital power is concentrated about the period of inflorescence for this object; at this time, therefore, is the greatest perfection to be expected. That the production of the seed requires the whole vital energy of which the plant is capable, may be seen in the fact that many plants (annuals) are unable to survive it.

In a more recent paper† he has shown that the active power resides by no means exclusively in the leaves; on the contrary, an extract prepared from the tender stalks is the more powerful. The plant selected for experiment was Belladonna, because in this case extremely accurate results could be obtained by determining the relative action of the two extracts on the eye. In consequence of these experiments the British Pharmacopœia has ordered the tender stalks as well as the leaves for making extracts from fresh plants.

The perfection of extracts made from fresh vegetables depends much on the attention given to them during their preparation, and to the temperature at which they are made. The lower the temperature during evaporation, the better the extract, if the time be not protracted so long as to cause some chemical change. It should be borne in mind that evaporation goes on only half as rapidly at 150° as it does at 180°, and only half at 180° as it does at 212° F. Constant agitation materially influences the rate of evaporation. When the atmosphere is warm and very dry, extracts may be made without artificial heat.

Extracts should be kept in a cool, dry place, first because a summer temperature frequently causes them to ferment, even though they may have been made with great care, and secondly because in a damp atmosphere they are apt to become mouldy.

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* *Pharmaceutical Journal,* vol. i. 1841.

† Ibid. Dec. 1861.

FARINA TRITICI.

WHEATEN FLOUR.

The grain of Wheat, *Triticum sativum*, ground and sifted.

(Port. and Span., Trigo; not in the other Pharmacopœias.)

Used only for Cataplasma Fermenti.

Made into a paste with honey, is an excellent application for boils.

Bran bread and Bran biscuits, also those of Gluten, are made for the food of Diabetic patients.

FEL BOVINUM PURIFICATUM.

PURIFIED OX BILE.

Fresh Ox Bile, 20; Rectified Spirit, 10: evaporate the Fresh Ox Bile to 5, and mix it with the Rectified Spirit; agitate, and set aside for twelve hours, then decant the clear liquor, filter the remainder, washing the contents of the filter with a little more Spirit. Distil off the Spirit, and evaporate the residue over a water bath to a pill consistence.

The Ox Bile is now evaporated before adding the Spirit, which is a saving of Spirit.

Solubility.—Soluble in Water and in Rectified Spirit. Insoluble in Ether.

Tests.—Its watery solution gives no precipitate on the addition of Rectified Spirit. 1 or 2 grs. dissolved in about 1 drm. of Water, then treated with a drop of freshly made syrup (Sugar 1, Water 4), and then with Sulphuric Acid cautiously added until the precipitate first formed is redissolved, gradually acquires a cherry-red colour, which changes in succession to carmine, purple, and violet.

(Belg. (Fel Bovinum Depuratum), Dan. and Swed. (Bilis Bovina Depurata), and Russ. (Fel Tauri Depuratum Siccum), equal weights of Gall and Rectified Spirit; Port. (Extracto de Fel de Boi), Gall 1, Alcohol 1, Animal Charcoal $\frac{1}{10}$; U.S. (Fel Bovis Purificatum), Ox Gall concentrated 3, and Spirit 2; not in others. Fr. (Extrait de Fiel de Bœuf), Russ., and Swiss (Fel Tauri Inspissatum), Span. (Extracto de Hiel), and U.S. (Fel Bovis Inspissatum), Gall evaporated, without purification by spirit.)

Medicinal Properties.—Alterative and laxative. Used where there is a deficiency of bile.

It is not desirable that it should come in contact with the stomach, hence the pills should be coated with Keratin.

Dose.—5 to 10 grs.

Formerly the bile was evaporated without purification, and then the dose was much larger.

8 oz. Ox Gall, diluted with 8 oz. Water and a few crystals of washing Soda, used as an **enema**, is sometimes useful in severe cases of intestinal obstruction.—*L.* '78, ii. 276, 316.

FERMENTUM.

See CEREVISIÆ FERMENTUM.

FERRUM.

IRON.

Fe, eq. 56.

Annealed iron wire, having a diameter about ·005 of an inch (about No. 35 wire gauge), or wrought iron nails freo from oxide.

Sp. g. 7·8; fuses about 2786° F. The use of Iron in medicine is of great antiquity; it is said to have been the first mineral used internally, more than 3000 years ago.

Annealed Iron Wire is the purest that can be obtained, and is ordered in the Pharmacopœia for making the various preparations. Iron Filings should by no means be trusted, as they are generally full of impurities.

(Austr., Dan., Dutch, Ger., Hung., Norw., Russ., Swed. and Swiss, Ferrum Pulveratum; Belg., Limatura Ferri, also ditto Porphyrisata; Fr., Fer Metallique; Port., Ferro; Russ. and U.S., Ferrum; Span., Hierro.)

Medicinal Properties.—Metallic Iron would exert no action in the living system, were it not for the acid which it generally meets with in the stomach. It is given in the state of fine division, as Ferrum Redactum. The Peroxide was formerly used in the shape of Ferrum Præcipitatum, but latterly the Saccharo-Carbonate of Iron and the Ammonio-Citrate of Iron, Dialysed Iron and Chloroxyde of Iron have taken its place. The Phosphates are much used, and the Tincture of the Perchloride, formerly called Sesquichloride, is still a favourite and reliable preparation; and for children the Vinum Ferri is preferred.

Of the preparations of Iron, some are astringent, and the astringent forms are pre-eminently tonic, and peculiarly well fitted to improve the quality of the blood when impoverished from any cause. Hence they are useful in diseases characterized by debility, especially in anæmia, associated with or consequent upon inordinate discharges. The diseases in which they are usually employed are chronic anæmia, dyspepsia, when dependent on deficient energy of the digestive function, and neuralgia. They are contra-indicated in acute inflammatory diseases, producing, when injudiciously employed, headache, and other symptoms, of an excited circulation.

Preparations.

MISTURA FERRI AROMATICA.

Iron Wire, 2; Red Cinchona Bark, in powder, 4; Calumba, in powder, 2; Cloves, bruised, 1; Compound Tincture of Cardamoms, 12; Tincture of Orange Peel, 2; Peppermint Water, 48: macerate the first four ingredients in the last one for three days in a closed vessel, agitating occasionally, filter, and make up with Peppermint Water to 50; to this add the tinctures, and preserve in a well-stoppered bottle.

Red Bark is now used in the place of Pale Bark.

Dose.—1 to 2 oz.

Much valued in Dublin as a tonic.

(Not in the foreign Pharmacopœias.)

VINUM FERRI.

Fine Iron Wire (No. 35), 1 oz.; Sherry, 20 oz.: digest thirty days with frequent agitation, the wire not being wholly immersed. The bottle to be uncorked after each agitation.

The quantity of Iron dissolved seems to depend almost wholly upon the acidity of the Wine. We found that a good dinner Sherry containing acids equal to ·396 p. c. of Acetic Acid, dissolved ·14 p. c. of Iron, and had its acidity reduced to ·09 p. c. It was treated as directed in the *B. P.*, and the bottle was about half full.

Of such a Vinum Ferri, 3 drms. would represent the Iron contained in 5 mins. of Tinct. Ferri Perchloridi.

(Not in the other Pharmaeopœias.)

Medicinal Properties.—Useful in restoring the blood, when a slight astringent is desired.

Dose.—1 to 4 drms.

N.B.—The old Vinum Ferri, made with Malaga, is much sweeter than that of the British Pharmacopœia, and is sometimes ordered on that account.

Not Official.

EXTRACTUM POMI FERRATUM.—Sour Apples, 50; convert them into a pulp and express; to the expressed liquid add Iron Wire 1; heat the mixture on a water-bath until the evolution of gas ceases. Dilute the liquid with water to make 50 parts, and set it aside for several days; then filter and evaporate to a thick extract. The extract should be a greenish-black, and should form a clear solution with water.

Dose.—3 to 10 grains.

(Austr. and Hung., Ext. Malatis Ferri; Dan., Ext. Pomi Ferratum; Ger., Russ., and Swiss, Ext. Ferri Pomatum; Norw. and Swed., Ext. Pomorum Ferratum. Swiss is prepared by dissolving freshly precipitated Peroxide of Iron in Apple Juice; all the others are with Metallic Iron and Apple Juice.)

TINCTURA POMI FERRATI.—Ferrated Extract of Apples, 1; Rectified Spirit, 1; Cinnamon Water to make 10.

Dose.—30 to 90 minims.

(Austr., Dan., Hung., Norw., and Swed., 1 and 5; Ger., Russ, and Swiss, 1 and 9; not in the others.)

MALATE OF IRON WINE.—In Devonshire a quantity of Iron Wire or Nails is digested in a bottle of Cider for a week, and a wineglassful three times a day is the dose.

FERRI ACETATIS LIQUOR FORTIOR.

STRONG SOLUTION OF ACETATE OF IRON.

Mix Solution of Ammonia 8 with Distilled Water 20, to this add gradually Solution of Persulphate of Iron 5, previously diluted with Distilled Water 20; stir the whole together, taking care that Ammonia is even finally in slight excess, as indicated by the odour of the mixture. Let the whole stand two hours, stirring occasionally; collect on calico, drain, and wash with Distilled Water until the filtrate ceases to precipitate with Chloride of Barium. Squeeze out the superfluous moisture, and dissolve the Ferric Hydrate in 3 of liquefied Glacial Acetic Acid, and make the volume up to 10 with Distilled Water.

A deep-red fluid with a sour styptic taste and acetous odour.

Miscible with Water and Rectified Spirit in all proportions.

Sp. g. 1·127.

Test.—1 fl. drm. diluted with 2 oz. Distilled Water gives with excess of Ammonia a reddish-brown precipitate, which when washed and ignited weighs 5·7 grs.

(Ger., sp. g. 1·081—1·083; Dan., Russ., Swed., and Swiss, sp. g. 1·134—1·138; U.S., sp. g. 1·160; not in the others.)

Preparations.

LIQUOR FERRI ACETATIS.

Strong Solution of Acetate of Iron, 5; Distilled Water to make 20. =(1 in 4).

Sp. g. 1·031.

Dose.—5 to 30 minims.

TINCTURA FERRI ACETATIS.

Strong Solution of Acetate of Iron, 5; Acetic Acid, 1; Rectified Spirit, 5; Distilled Water, 9: mix, and add sufficient Distilled Water to make 20. Preserve in a stoppered bottle. (=1 in 4).

Dose.—5 to 30 minims.

This is a great improvement on the Tincture of Brit. Pharm. 1867.

(Dan., Dutch, Ger., Russ., Swed., Swiss, and U.S., with Acetic Ether, see below.)

Not Official.

TINCTURA FERRI ACETICI ÆTHEREA—

Dutch, Solution of Acetate of Iron, 100; Strong Spirit, 12; Acetic Ether, 8.

Ger., Solution of Acetate of Iron (sp. g. 1·082), 10; Alcohol, $1\frac{1}{2}$; Acetic Ether, 1.

Russ., Solution of Acetate of Iron (sp. g. 1·136), 9; Rectified Spirit, 2; Acetic Ether, 1.

Dan., Swed., and Swiss, Solution of Acetate of Iron (sp. g. 1·136), 15; Rectified Spirit, 3; Acetic Ether, 2.

U.S., Solution of Acetate of Iron (sp. g. 1·160), 10; Alcohol, 6; Acetic Ether, 4. All by weight.

Dose.—10 to 20 minims.

Not Official.

FERRI ALBUMINAS.

A liquor is official in the Dutch Pharmacopœia containing ·25 p.c. of Ferric Oxide, and several other formulas have been proposed, but, it is more convenient to use the commercial scale preparation, which is fairly soluble in Water, and contains 5 p.c. of Ferric Oxide.

Medicinal Properties.—Given in anæmia and specially recommended in gastric ulcer.—*T.G.* '86, 399.

Dose.—3 to 10 grains.

FERRI ARSENIAS.

ARSENIATE OF IRON.

Arseniate of Iron, with some Oxide.

A tasteless amorphous powder, of a greenish colour.

Dissolves readily in Hydrochloric Acid; insoluble in water.

Tests.—A small quantity, boiled with an excess of Caustic Soda and filtered, gives when exactly neutralized by Nitric Acid, a brick red precipitate with solution of Nitrate of Silver. The solution in Hydrochloric Acid when diluted gives no precipitate with Chloride of Barium—absence of Sulphuric Acid. 100 grains dissolved in an excess of Sulphuric Acid diluted with water continue to give a blue precipitate with the Ferricyanide of Potassium, until at least

225 grain-measures of the volumetric solution of Bichromate of Potassium have been added; that is to say, it must contain sufficient Ferrous Salt to require this quantity of Bichromate of Potassium to convert it all into Ferric Salt.

(Belg. Fr. and Span.; not in the other Pharmacopœias.)

Medicinal Properties.—Similar to those of Arsenious Acid.

Dose.—$\frac{1}{16}$ gr., gradually increased to $\frac{1}{8}$ gr. in a pill, three times daily.

Antidotes.—*See* Acidum Arseniosum.

Not Official.

FERRI BROMIDUM.

The Commercial Salt is in greyish-white crystalline masses, coated with red insoluble Oxybromide, which amounts to about ·5 p. c.

It generally contains about 18 p. c. of Water, corresponding with the formula $FeBr_2.3H_2O$. When this is not allowed for, a Syrup or Liquor made from the solid Bromide will be proportionately weaker than when the Bromide is calculated as anhydrous.

Preparations.

LIQUOR FERRI BROMIDI FORTIS.—A clear green liquid. Sp. g. 1·554.

Each fluid drachm contains 36 grs. of Bromide of Iron ($Fe\ Br_2 = 216$).

This solution keeps well in a corked bottle, with bright iron wire immersed in it, and on filtration gives a clear green liquid.

A small quantity of Hypophosphorous Acid is now commonly used for the same purpose. With this addition the Liquor will keep without any precautions, and may be exposed to the air without depositing.

(Fr., 33 p.c.; Port., Brometo Ferroso (solid, no solution); not in the others.)

SYRUPUS FERRI BROMIDI.—Strong Solution of Bromide of Iron (filtered), 1 fl. drm.; Simple Syrup, 7 fl. drms.: mix.

Contains 4½ grs. of Bromide of Iron in each fluid drachm.

(U.S. contains 10 p.c. of Ferrous Bromide; not in the others.)

Medicinal Properties.—A tonic in anæmia, chlorosis, and amenorrhœa.

SYRUPUS FERRI BROMIDI (*B.P.C.*).—Iron Wire free from oxide, ½ oz.; Bromine 533 grs.; Refined Sugar 14 oz.; Distilled Water a sufficiency. Dissolve the Sugar in 6 ozs. of the water in a water-bath. Put the Iron Wire with 4 ozs. of the water into a glass flask, having a capacity of at least 20 ozs., and surround it with cold water, and add the Bromine in successive quantities; shake occasionally until the froth becomes white and the reaction is complete. Filter the solution into the warm syrup, and if necessary add sufficient of the water to produce 20 ozs.

Each fluid drachm contains 4½ grains of Bromide of Iron.

Dose.—Half to one fluid drachm.

SYRUPUS FERRI ET QUININÆ HYDROBROMATUM (*B.P.C.*).—Acid Hydrobromate of Quinine, 160 grains; Diluted Hydrobromic Acid, 1 oz.; Distilled Water, 1 oz.: mix the Acid and Water and dissolve the Quinine Salt; then add Syrup of Bromide of Iron to make 20 ozs.

1 fl. drm. = 1 grain Acid Hydrobromate of Quinine, and about 4 grains Bromide of Iron.

The Acid solution must, however, be made warm, and if filtration is necessary, kept warm during the process, otherwise the Salt will crystallize out.

The addition of Hydrobromic Acid lessens the solubility of the Quinine Salt in water.

Dose.—30 to 60 minims.

SYRUPUS FERRI, QUININÆ ET STRYCHNINÆ HYDROBROMATUM (*B.P.C.*)—Strychnine in powder, 2½ grs.; Acid Hydrobromate of Quinine, 160 grs.; Diluted Hydrobromic Acid 1 oz.; Distilled Water 1 oz.: mix the Acid and Water and dissolve the Strychnine and Quinine Salt by the aid of a gentle heat; then add Syrup of Bromide of Iron to make 20 ozs.

1 fl. drm. = $\frac{1}{64}$ grain Strychnine, 1 grain Acid Hydrobromate of Quinine and about 4 grains Bromide of Iron.

Dose.—30 to 60 minims.

FERRI CARBONAS SACCHARATA.

SACCHARATED CARBONATE OF IRON.

Carbonate of Iron, $FeCO_3, xH_2O$ mixed with Peroxide of Iron and Sugar, the Carbonate (if reckoned as anhydrous) forming about one-third of the mixture.

Sulphate of Iron, 2; Carbonate of Ammonium, 1¼; Boiling Distilled Water, 320; Refined Sugar, 1: dissolve the Sulphate of Iron and the Carbonate of Ammonium, each separately in one-fourth of the water, and mix thoroughly and briskly the two solutions in a deep cylindrical vessel, which is to be then covered closely; in twenty-four hours decant the supernatant liquid by a syphon, and pour the remainder of the water on the precipitate, stir well, and again syphon off the liquid when clear. Collect the deposit on a calico filter, press, and rub with the sugar in a porcelain mortar. Dry it at a temperature not exceeding 212° F. (100° C.).

When cold or tepid Water is used in the place of boiling Water, the precipitate occupies much less bulk, and is more easily washed. To avoid the formation of Basic Salts, the Iron should always be added to the Alkali.

The Sugar protects the Carbonate of Iron from oxidation.

Small coherent lumps of a grey-brown colour, with a sweet, very feeble, chalybeate taste.

Dissolves with effervescence in warm diluted Hydrochloric Acid.

Tests.—Its solution in Hydrochloric Acid gives but a very slight precipitate with Chloride of Barium—indicating a trace only of Sulphate. 30 grains dissolved in excess of Phosphoric Acid, and diluted with water, continue to give a blue precipitate with Ferricyanide of Potassium, until at least 287·5 grain-measures of the volumetric solution of Bichromate of Potassium have been added; that is to say, it must contain sufficient Ferrous Salt to require this quantity of Bichromate of Potassium to convert it all into Ferric Salt.

(Ferrum Carbonicum Saccharatum, Austr. and Swiss contain about 40 p. c. of Carbonate of Iron; Ger. 20 p. c.; Russ. 11 p. c.; Belg. Carbonas Ferri Saccharatus, 20 p. c.; U.S. contains 15 p. c.; Dan. and Swed. Hydratocarbonas Ferrosus Saccharatus; not in the others.)

Medicinal Properties.—An excellent chalybeate; readily soluble in acids. Not astringent. Useful in anæmic amenorrhœa.

B. P. Dose.—5 to 30 grs., which is equivalent to 1⅔ to 10 grs. of Carbonate of Iron.

Incompatibles.—Acids and Acidulous Salts; all Vegetable Astringents.

Preparations.

MISTURA FERRI COMPOSITA. *Syn.* Griffiths' Mixture.

Sulphate of Iron, 25 grs.; Carbonate of Potassium, 30 grs.; Myrrh, 60 grs.; Sugar, 60 grs.; Spirit of Nutmeg, 4 drms.; Rose Water, 9½ oz.

Reduce the Myrrh to powder, add the Carbonate of Potassium and Sugar, and triturate them with a small quantity of Rose Water so as to form a thin paste, then gradually add more Rose Water and the Spirit of Nutmeg, continuing the trituration and further addition of Rose Water until about eight fluid ounces of a milky liquid is formed; then add the Sulphate of Iron previously dissolved in the remainder of the Rose Water, mix thoroughly, and cork the bottle immediately.

It is convenient to keep this mixture without the Iron; the addition of the Sulphate of Iron, as directed, can be made when required.

Dose.—1 to 2 oz. as a stimulating tonic.

(Dan. and Norw. similar to Brit., but with three times as much Sugar, and without Nutmeg; U.S. similar to Brit., but with Sp. of Lavender in the place of Nutmeg; Swed. with Peppermint Water and Lavender in the place of Rose Water and Nutmeg; not in the others.)

PILULA FERRI CARBONATIS.

Saccharated Carbonate of Iron, 4; Confection of Roses, 1: mix. =(1 in 1¼).

B. P. Dose.—5 to 20 grs. (usual dose prescribed 3 to 5 grs.), as a tonic for delicate females and children.

This resembles Vallet's mass, which is made by precipitating and washing the Carbonate of Iron, and mixing it with Honey and Sugar of Milk to form a mass.

Blaud's Pills are made by mixing in the pill mass the Sulphate of Iron and Carbonate of Potassium.

(Belg., Pilulæ Bland and Pilulæ Vallet; Dutch, Pilulæ Blandii; Fr., Pilules de Carbonate Ferreux and Pilules Ferrugineuses de Blaud; Ger., Pilulæ Ferri Carbonici; Port., Pilulas de Carbonato Ferroso; Span., Pildoras de Blaud and Pildoras Ferruginosas de Vallet; Swed., Pilulæ Myrrhæ Ferratæ; Swiss, Pilulæ Ferratæ Blaudii and Pilulæ Ferratæ Valleti; U.S., Massa Ferri Carbonatis and Pilulæ Ferri Compositæ; not in the other Pharmacopœias.)

Not Official.

PIL. FERRI (BLAUD) (*B.P.C.*).—Sulphate of Iron, 60 grs.; Carbonate of Potassium, 36 grs.; Sugar, 12 grs.; Tragacanth, 4 grs.; Glycerine, 2½ mins. Distilled Water, a sufficiency. Finely powder the Sulphate of Iron and mix with the Sugar and Tragacanth; finely powder the Carbonate of Potassium in another mortar and mix with it the Glycerine. Transfer this to the mortar containing the Sulphate of Iron, beat thoroughly until the mass becomes green and add Water until it assumes a soft pilular consistence, and divide into 24 pills.

Each pill contains about 1 grain of Ferrous Carbonate.

Dose.—1 to 3 pills.

As the French Codex orders equal parts of the *dried* salts, the proportions are somewhat similar to the above.

TROCHISCI FERRI CARBONATIS SACCHARATÆ.—These are now largely used, containing 3 grains of Saccharated Carbonate in each.

Dose.—1 to 3 lozenges.

FERRI ET AMMONII CITRAS.

CITRATE OF IRON AND AMMONIUM.

In thin transparent scales of a deep red colour, slightly sweet and astringent in taste.

Solubility.—10 in 5 of water; 2 dissolved in 3 of water measure 4; almost insoluble in Rectified Spirit.

Tests.—Heated with Solution of Potash, it evolves Ammonia and deposits Ferric Hydrate; the alkaline solution from which the Iron has separated does not, when slightly supersaturated with Acetic Acid, give any crystalline deposit—distinguishing it from Tartrate. When incinerated with exposure to air, it leaves about 30 per cent of Peroxide of Iron, which is not alkaline to Litmus.

In commercial samples the ash is always alkaline, owing to fixed Alkali being used for the precipitation of the Iron.

(U.S.; Austr., Ferrum Citricum Ammoniatum; Belg., Citras Ferri; Fr., Citrate de Fer Ammoniacal; Norw. Citras Ferrico-Ammonicus; Port. Citrato de Ferro Ammoniacal; Russ. and Swiss, Ferrum Citricum Oxydatum Ammoniatum; Span. Citrato Ferrico-Amonico; not in the others.)

Medicinal Properties.—As a hæmatinic, it is a very effectual salt, and it possesses scarcely any astringency: it may often be given when the stomach will not bear the more astringent preparations of iron.

Dose.—5 to 10 grs.; it becomes moist if kept in paper.

In prescribing the above Salt to be taken during effervescence, care must be taken to put the Salt of Iron into the Citric Acid Solution, and not into the Bicarbonate of Potassium Solution, because if it be put into the latter, Carbonic Acid will be given off and the bottle burst. Tincture of Orange is the best flavouring agent, but prescribers are in the habit of ordering this Salt in Tincture of Orange alone, in which it will not dissolve, therefore the division into doses is impracticable. The addition of only a small quantity of water will make the solution perfect.

Incompatibles.—Mineral Acids, Vegetable Astringents, and fixed Alkalies.

Preparation.

VINUM FERRI CITRATIS.

Citrate of Iron and Ammonium, 160 grs.; Orange Wine, 20 oz.; dissolve, and after three days filter. =(1 gr. in each fl. drm.).

Dose.—1 to 4 drms.

(U.S., Tinct. Orange, Syrup, and stronger White Wine, 1 in 25; Fr., Vin Chalibé, and Swiss, Vinum Ferratum, 1 and 200 of Malaga; not in the other Pharmacopœias.)

FERRI ET QUININÆ CITRAS.

CITRATE OF IRON AND QUININE.

Thin scales of a greenish golden-yellow colour, somewhat deliquescent, entirely soluble in cold water.

Solubility.—2 in 1 of water.

Taste bitter as well as chalybeate.

Tests.—Its aqueous solution is very slightly acid, and is precipitated reddish-brown by Solution of Soda, blue by Ferro- and Ferri-cyanide of Potassium, and greyish-black by Tannic Acid. When burned with exposure to air, it leaves a residue (Oxide of Iron) which, when moistened with water, is not alkaline to test-paper. 50 grains dissolved in an ounce of water, and treated with a slight excess of Ammonia, give a white precipitate, which, when dissolved out by successive treatments of the fluid with Ether or Chloroform, and the latter evaporated, and the residue dried until it ceases to lose weight, weighs 7½* grains (Quinine); the precipitate is almost entirely soluble in a little pure Ether.

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* B. P. 1867 and the first issue of B. P. 1885 required 8 grains, but it has since been altered by the editors of B. P. to 7½.

(Austr., Ger., Russ., and Swiss, Chininum Ferro-Citricum; Port., Citrato de Ferro et do Quinina; Span., Citrato Ferrico-Quinico; Swed., Citras Ferrico-Chinicus; U.S.; not in the others.)

Medicinal Properties.—Astringent and tonic, combining the properties of both Iron and Quinine.

6⅔ grains contain 1 grain of Quinine.

Dose.—5 to 10 grains as a tonic, three times a day, in solution or in pill made with Syrup: 6 grains require 1 minim of Syrup.

Incompatibles.—Alkalies and their Carbonates, Tannic Acid, and Vegetable Astringents.

Not Official.

MISTURA FERRI ET QUINIÆ EFFERVESCENS.—Citrate of Iron and Ammonia, 5 grs.; Sulphate of Quinia, 1 gr.; Citric Acid, 10 grs.: Water, 1 oz., to be taken with 10 grs. of Bicarbonate of Soda.—*Consumption Hospital.*

Not Official.

FERRI HYPOPHOSPHIS.

When freshly prepared it is a greenish Crystalline Powder, soluble about 1 in 10 of Water, but the commercial Salts are so insoluble as to be practically useless for Pharmaceutical purposes.

FERRI HYPOPHOSPHITIS LIQUOR FORTIS. B.P.C.

Sulphate of Iron, 760 grs.; Hypophosphite of Barium (containing not less than 95 p.c. of $Ba.2(PH_2O_2)\ H_2O)$, 830 grs.; Diluted Sulphuric Acid 100 mins.; Distilled Water, 20 ozs.: put the Sulphate of Iron with 5 ozs. of the water in a tall 24-oz. bottle and shake till dissolved. Dissolve the Hypophosphite of Barium in the remainder of the water, 15 ozs., and add slowly to the former solution: shake and add the Diluted Sulphuric Acid, again shake and set aside for two days, then syphon off the clear liquid. Keep it in bottles quite full and in a dark place.

Each fl. drm. = about 5 grs. of Hypophosphite of Iron.

The Solution has an acid reaction, and it should not give more than a faint precipitate, if any, with either diluted Sulphuric Acid or solution of Chloride of Barium.

Dose.—10 to 30 minims.

This solution is readily made, and the use of Barium Salts (always objectionable) avoided, by dissolving, with the aid of heat, 153 grs. of Iron Wire in 3 ozs. of Hypophosphorous Acid, with sufficient Water to make at the finish 20 ozs. The product having been filtered through Cotton Wool.

It will contain 5 grs. per drm. of the Hydrated Salt ($FeP_2H_4O_4.6H_2O$), to which all the B. P. C. formula are calculated.

LIQUOR HYPOPHOSPHITUM COMPOSITUS (*B.P.C.*).—Hypophosphite of Calcium, 320 grs.; Hypophosphite of Sodium, 320 grs.; Hypophosphite of Magnesium, 160 grs.; Strong Solution of Hypophosphite of Iron, 6 fl. ozs.; Hypophosphorous Acid (30 p.c.), ½ fl. oz.; Distilled Water, a sufficiency. Dissolve the Hypophosphites of Calcium, Sodium, and Magnesium in 12 ozs. of the Water; add the solution of Hypophosphite of Iron and the Hypophosphorous Acid. Filter, and add Distilled Water to make 20 ozs.

Each fl. drm. = 2 grs. each of Hypophosphite of Sodium and Calcium, 1 gr. Hypophosphite of Magnesium, and 1½ grs. of Hypophosphite of Iron.

Dose.—½ to 2 fluid drachms.

SYRUPUS FERRI HYPOPHOSPHITIS (*B.P.C.*).—Strong Solution of Hypophosphite of Iron, 4 ozs.; Syrup, 16 ozs.: mix.

Each fl. drm. = about 1 gr. of Hypophosphite of Iron.

Dose.—½ to 2 fluid drachms.

SYRUPUS HYPOPHOSPHITUM COMPOSITUS (*B.P.C.*).—Quinine (alkaloid), 20 grs.; Strychnine, 1 gr.: Hypophosphorous Acid (30 p.c.), 2 fl. drms; Strong Solution of Hypophosphite of Iron, 3 fl. ozs.: dissolve and add Hypophosphite of Calcium, 80 grs.; Hypophosphite of Manganese, 40 grs.; Hypophosphite of Potassium, 40 grs.: dissolve, filter, and add Syrup to produce 20 ozs.: mix.

Each fl. drm. contains $\frac{1}{100}$ gr. Strychnine and $\frac{1}{8}$ gr. of Quinine.

Dose.—$\frac{1}{2}$ to 2 fluid drachms.

Not Official.

FERRI IODIDUM.

$FeI_2.2H_2O$.

IODIDE OF IRON.

In reddish-brown dense masses, easily soluble in Water, with a slight residue, and forming a reddish-yellow solution owing to partial oxidation. The solution may be made green by boiling or digestion with bright Iron Wire.

It was official in B. P. 1864 and 1867, but is now omitted in B. P. 1885. The official preparations Pilula and Syrupus are still retained.

(Belg., Dan., Ger., Port., Russ., Span., and Swiss; not in the others.)

LIQUOR FERRI IODIDI FORTIS.—A clear greenish liquid. Sp. g. 1·511. Each fl. drm. contains 34 grs. of Iodide of Iron (FeI_2 = 310).

The solution keeps well in a corked bottle, with bright Iron wire immersed in it, and on filtration gives a clear green liquid. A small quantity of Hypophosphorous Acid is now commonly used for the same purpose; with this addition the Liquor will keep without any precautions, and may be exposed to the air without depositing.

LIQUOR FERRI IODIDI.—Strong solution of Iodide of Iron 1; Distilled Water, 7; mix. This solution is the same strength as the Syrup.

FERRUM IODATUM SACCHARATUM.—Russ. and U.S.; 5 containing 1 of Iodide.

Incompatibles.—Acids, Acidulous Salts, Alkalies and their Carbonates, Lime Water, Vegetable Astringents.

Official Preparations.

PILULA FERRI IODIDI. *Syn.* BLANCHARD'S PILLS.

Fine Iron Wire, 40 grs.; Iodine, 80 grs.; Refined Sugar in powder, 70 grs.; Liquorice Root in powder, 140 grs.; Distilled Water, 50 minims: agitate the Iron with the Iodine and the Water in a strong stoppered ounce phial, until the froth becomes white. Pour the fluid upon the Sugar in a mortar, triturate briskly, and gradually add the Liquorice.

$3\frac{1}{2}$ grains contain 1 grain of the anhydrous Iodide.

Dose.—3 to 8 grs.

(Belg., Dan., Dutch, Fr., Norw., Port.; Span., Swed., and Swiss, each pill contains about $\frac{3}{4}$ grain Iodide of Iron, Hung. and U.S. about 1 grain, and all coated with Bals. Tolu dissolved in Ether, except the Swiss; not in the others.)

SYRUPUS FERRI IODIDI.

Fine Iron Wire, 1; Iodine, 2; Refined Sugar, 28; Distilled Water, 13. Make a syrup with the sugar and 10 of the water, and keep it hot. Digest the iron wire, the iodine, and 3 of water, in a flask at a gentle heat, shake them together until the froth of the mixture becomes white; add now 2 of the syrup, and boil gently for ten minutes; filter whilst still hot into the remainder of the syrup, and mix. The product should weigh about 43, or measure $31\frac{1}{2}$.

Sp. g. 1·385.

Each fluid drachm contains 4·3 grains of the anhydrous Iodide.

(Brit. 5·7 per cent. of Iodide of Iron; Austr., Dutch, Ger., and Russ., 5 p.c.; Hung., 12 p.c.; Belg., Fr., and Port., 0·5 p.c.; Dan., Norw., Swed., and U.S., 10 p.c.; Span., ·67 p.c.; Swiss, 1 p.c.; all by weight.)

Medicinal Properties.—It combines the properties both of Iodine and Iron, and is a most valuable tonic in the treatment of scrofulous diseases in cachectic subjects requiring Iron.

Dose.—20 to 60 minims.

Not Official.

FERRI LACTAS.

Small greenish crystals, with a tendency to oxidise on exposure to air.

Solubility.—1 in 300 of Water.

(Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Norw., Port., Russ., Span., Swed., Swiss, and U.S.)

Medicinal Properties.—Given in anæmia and chlorosis.

Dose.—2 to 10 grains given in lozenge, pill, or syrup.

Not Official.

FERRI PERCHLORIDUM.

The Anhydrous Chloride of Iron (Fe_2Cl_6), prepared by sublimation, is in black metallic-looking plates. It deliquesces rapidly on exposure to the air, and then solidifies again to a Hydrate ($Fe_2Cl_6.12H_2O$.), containing 40 per cent. of Water. Another Hydrate ($Fe_2Cl_6.5H_2O$), containing 21·7 per cent. of Water (official in the Portuguese Pharmacopœia), can be obtained by evaporating an acid solution until syrupy, and then cooling it.

The commercial solid or crystalline Perchloride of Iron approximates to the formula $Fe_2Cl_6.12H_2O$; it occurs in yellow or yellowish-brown crystalline masses, deliquescing in air. It is soluble in Water, Alcohol, Ether, and Glycerine.

(Austr., Ger., Hung., and Swiss, Ferrum Sesquichloratum Crystallisatum; Belg., Chloruretum Ferricum Anhydricum; Dan., Dutch, Norw., and Swed., Chloretum Ferricum; Port., Chloreto Ferrico Anhydro, also Crystallisado; Russ., Ferrum Sesquichloratum; Span., Chloruro Ferrico (anhydrous and the Hydrate); U.S., Ferri Chloridum; Fr. has no solid Perchloride of Iron.)

FERRI PERCHLORIDI LIQUOR FORTIOR.

STRONGER SOLUTION OF PERCHLORIDE OF IRON.

Perchloride of Iron, Fe_2Cl_6, eq. 325, in solution in water.

Iron Wire, 4; Hydrochloric Acid, 20½; Nitric Acid, 1½; Distilled Water a sufficiency. Mix 12½ of the Hydrochloric Acid with 7 of the Water, and pour the mixture on the Iron Wire placed in a flask, applying a gentle heat until effervescence ceases; boil, then filter the solution from undissolved Iron, rinsing the flask and contents with a little Water and pouring this over the filter; and add to the filtrate 7 of Hydrochloric Acid; mix, and pour the solution in a slow continuous stream into 1½ of Nitric Acid, the evolution of red fumes being promoted if necessary by a slight application of heat. Evaporate the product until no more nitrous fumes escape and a precipitate begins to form; then add 1 of Hydrochloric Acid and sufficient Water to produce 17½ of the solution.

Note.—This solution is now improved by being evaporated much lower, as suggested in previous editions of the Companion; but as the sp. g. varies with the point to which the evaporation is carried, it should be evaporated to a given weight, say 12½ ounces.

An orange-brown solution, miscible with water and alcohol in all proportions. It contains 20 per cent. of Iron.

Tests.—Sp. g. about 1·42.—A fluid drachm diluted with 2 ounces of Water gives, upon the addition of an excess of Solution of Ammonia, a reddish-brown precipitate, which, when well washed and incinerated, weighs between 15 and 16 grains. A piece of Copper, boiled for a few minutes in 50 or 100 grains of this solution diluted with water, then rinsed with water, dried and heated in a dry test-tube, yields no white crystalline sublimate. Diluted with water it gives a white precipitate with Nitrate of Silver (Chloride), and blue with Ferrocyanide of Potassium (Ferric Salt), but none with Ferricyanide of Potassium (absence of Ferrous Salt).

(Austr., sp. g. 1·280; Belg., Fr., Port., and Span., sp. g. 1·260 (about 9 per cent. of Iron); Dan., Norw., and Swed., sp. g. 1·298—1·302, Russ. and Swiss, sp. g. 1·290—1·300 (about 10 per cent. of Iron); Dutch, 1·441—1·488 (about 15 per cent. of Iron); Ger. and Hung., sp. g. 1·280 to 1·283 (10 per cent. of Iron); U.S., sp. g. 1·405.)

Medicinal Properties.—A powerful local styptic and astringent. Mixed with equal parts of Glycerine has been used as a **paint** in diphtheria. The more dilute forms are used internally.

Preparations.

LIQUOR FERRI PERCHLORIDI.

Solution of Perchloride of Iron. Of the same strength as the Tincture.

Strong solution of Perchloride of Iron, 1; Distilled Water, sufficient to produce, after admixture, 4. =(1 in 4).

Sp. g. 1·11.

Dose.—10 to 30 minims.

This preparation was introduced in order to save the expense of the Spirit used in the Tincture; also it kept better than the former Tincture.

TINCTURA FERRI PERCHLORIDI.

Strong Solution of Perchloride of Iron, 1; Rectified Spirit, 1; Distilled Water, 2: mix, and then add sufficient Distilled Water to make 4. =(1 in 4).

Spirit reduced in quantity two-thirds and replaced by Water.

Sp. g. 1·080—1·083.

Dose.—10 to 30 minims in Water.

(Dan. Norw. and Swed. Solutio Chloreti Ferrici Spirituosa; Russ. Tinct. Ferri Chlorati; U.S. Tinctura Ferri Chloridi; Belg. and Port. from the Salt, with Alcohol and Ether. Not in the other Pharmacopœias.)

Medicinal Properties.—The Tincture and Solution of Perchloride of Iron have been more used than any other preparation of Iron; given in passive hæmorrhage and as a general tonic; highly useful in anæmia, chlorosis, and epilepsy; have been used as a paint in erysipelas; act especially on the kidneys in albuminuria, the urethra in gleet, and give tonicity to the bladder; slightly aphrodisiac.

It has been given with success in acute Rheumatism.—*B.M.J.* '75, ii. 417; '76, i. 563.

Dose.—10 to 30 minims in Water.

If given during effervescence with Bicarbonate of Sodium, 9 grains are about equal to 60 minims of Tincture.

Incompatibles.—Alkalies and their Carbonates, Lime Water, Carbonate of Calcium, Magnesia and its Carbonate; astringent vegetables render it black, and mucilage decomposes it.

Preparations of Iron can be given in Infusion of Quassia, or Calumba, but they tinge Infusion of Chiretta and Hops, and change to brown or black those of Chamomile, Cusparia, Gentian, Orange, Cascarilla, Cloves, Digitalis, Bark, and all astringent infusions.

LIQUOR FERRI DIALYSATUS.

Mix Strong Solution of Perchloride of Iron 6 with Distilled Water 40, and stir into the mixture sufficient diluted solution of Ammonia to impart, after thorough agitation, a distinct ammoniacal odour. Collect the precipitated Ferric Hydrate on calico and wash it with Distilled Water, then squeeze to remove the superfluous water: add the precipitate to Strong Solution of Perchloride of Iron 1, stir thoroughly, warm gently, and when complete or nearly complete solution is obtained, filter, if necessary, and place the liquid in a covered dialyser; then subject it to a stream of water in the usual manner until the solution on the dialyser is almost tasteless. The resulting solution should measure 28.

Instead of dialysing until the solution is nearly tasteless, it would be better to work to a definite percentage of Chlorine; ·3 p. c. makes a stable Liquor.

A clear dark reddish-brown liquid. Neutral to test-papers.

Sp. g. about 1·047.

Tests.—The solution gives no precipitate with Ferrocyanide of Potassium or with Nitrate of Silver, but after being heated with Hydrochloric Acid it yields with Ferrocyanide of Potassium a blue precipitate. 100 grains by weight affords a precipitate with a solution of Ammonia, which washed, dried, and ignited weighs 5 grains.

The addition of Ferrocyanide of Potassium may be expected to throw out the Ferric Hydrate, tinged with a little Prussian Blue.

(Austr., Ferrum Hydro-oxydatum Dialysatum Liquidum; Ger. and Hung., when Liquor Ferri Oxydati Dialysati is prescribed, Liquor Ferri Oxychlorati may be dispensed; not in the others.)

Medicinal Properties.—A palatable non-astringent hæmatinic, given in cases where the astringent salts would derange the stomach.

Not Official.

LIQUOR FERRI CHLOROXYDI.—A solution in water of a basic Chloride of Iron, containing 5 per cent. of Ferric Oxide and ·8 per cent. of Chlorine, approximating to the formula $Fe_2Cl_6.4Fe_2O_3$. This ratio is, of course, very different to that obtained by precipitating 4 volumes of Liquor Ferri Perchloridi Fortior, and dissolving the precipitate in 1 volume of the same.

Exception has been taken to Dialysed Iron, because it has been deprived of its acid; this preparation may be considered as a medium between Liquor Ferri Perchloridi and Dialysed Iron.

Dose.—10 to 30 minims.

FERRI PERNITRATIS LIQUOR.

SOLUTION OF PERNITRATE OF IRON.

Pernitrate of Iron, Fe_26NO_3, eq. 484, in solution in Water.

Fine Iron Wire, 1; Nitric Acid, 4½; Distilled Water, *q. s.*: dilute the Nitric Acid with 16 of water, dissolve the Iron (take care to moderate the action by occasionally adding more water), filter, and add water to make the measure 30.

A clear solution, of a reddish-brown colour.

Tests.—Sp. g. 1·107 (more correctly 1·113 to 1·115.) 1 fluid drachm treated with an excess of Solution of Ammonia gives a precipitate which, when washed, dried, and incinerated, weighs 2·6 grains. It gives no precipitate with Ferricyanide of Potassium—indicating absence of Ferrous Salt. When to a little of it placed in a test-tube half its volume of pure Sulphuric Acid is added, and then a solution of Sulphate of Iron is poured on, the whole assumes a dark-brown colour. (Test for Nitrate.)

(U.S., Liquor Ferri Nitratis, half the strength, sp. g. 1·050 ; not in the others.)

Medicinal Properties.—Tonic and astringent. Useful in chronic diarrhœa.

Dose.—10 to 40 minims.

FERRI PEROXIDUM HYDRATUM.

PEROXIDE OF IRON.

Syn. Ferri Sesquioxidum ; Ferri Oxidum Rubrum.

Fe_2O_3,H_2O, eq. 178.

A reddish brown powder, without taste, and not magnetic.

Moist Peroxide of Iron dried at 212° F. (100° C.), and reduced to powder.

Solubility.—Dissolves completely though slowly with the aid of heat, in Hydrochloric Acid, diluted with half its volume of water.

Tests.—Heated to dull redness in a test tube it yields about 10 per cent. of moisture—indicating that it has not been dried at too high temperature. The solution in Hydrochloric Acid gives no precipitate with Chloride of Barium, nor with Ferricyanide of Potassium—indicating absence of Sulphuric Acid and Ferrous Oxide.

Dose.—5 to 30 grs.

(Russ., Ferrum Oxydatum Hydratum; Belg., Carbonas Ferri; Fr., Oxyde de Fer Bihydraté ; Norw. and Swed., Hydras Ferricus ; Port., Oxydo Ferrico Carbonatado ; Span., Hidrato Ferrico Gelatinoso ; Swiss, Ferrum Oxydatum ; U.S., Ferri Oxidum Hydratum ; called also Crocus of Mars, Rouge.)

Preparation.

EMPLASTRUM FERRI. Chalybeate Plaster. *Syn.* Empl. Thuris ; Empl. Roborans.

Peroxide of Iron, in fine powder, 1 ; Burgundy Pitch, 2 ; Lead Plaster, 8 : melt the pitch and plaster together, and stir in the oxide. =(1 in 11).

(U.S., similar ; Fr., Emplâtre de Canet, about 1 in 5 ; Port., Emplastro de Oxydo Ferrico, 1 in 20 ; not in the others.)

Used as a strengthening plaster, and to afford mechanical support to relaxed muscles.

FERRI PHOSPHAS.

PHOSPHATE OF IRON.

Ferrous Phosphate $Fe_3(PO_4)_2\ 8H_2O$, eq. 502, at least 47 per cent. ; with Ferric Phosphate and some Oxide.

A slate-blue amorphous powder. Becomes of a green hue by keeping.

Solubility.—In acids, insoluble in water.

Tests.—When it is digested in Hydrochloric Acid with a lamina of pure Copper, a dark deposit does not form on the metal—indicating absence of Arsenic, also distinguishing it from the Arseniate of Iron. 30 grains dissolved in Hydrochloric Acid continues to give a blue precipitate with Ferricyanide of Potassium until 279 grain-measures of volumetric Solution of Bichromate of Potassium have been added—indicating nearly 47 per cent. of Ferrous Phosphate.

(Belg., Russ., Span., Swiss, and U.S.; not in the others.)

Medicinal Properties.—Tonic. Possesses the general properties of the ferruginous preparations. Given with advantage in amenorrhœa, some forms of dyspepsia and rachitis.

Dose.—5 to 10 grs.

Preparation.

SYRUPUS FERRI PHOSPHATIS.

Granulated Sulphate of Iron, 224 grs.; Phosphate of Sodium, 200 grs.; Bicarbonate of Sodium, 56 grs.; Concentrated Phosphoric Acid, 1¼ oz.; Refined Sugar, 8 oz.; Distilled Water, 8 oz. Dissolve the Sulphate of Iron in 4 oz. of boiling Water, and the Phosphate of Sodium in 4 oz. of cold Water: mix the two solutions, then add the Bicarbonate of Sodium dissolved in a little water, and, after carefully stirring, transfer the precipitate to a calico filter, and wash it with Distilled Water till the filtrate ceases to be affected by Chloride of Barium; mix the residue on the filter, in a mortar with the Phosphoric Acid. As soon as the precipitate is dissolved, filter the solution, add Water and the Sugar, and dissolve without heat. The product should measure exactly 12 oz. Sp. g. about 1·305.

Each fluid drachm contains about 1 grain of anhydrous Phosphate of Iron.

This syrup can be conveniently made by adding 1 volume of Liquor Ferri Phosphatis Fortis to 6 vols. of Simple Syrup and 1 vol. of Distilled Water.

Dose.—1 drm.

(In no other Pharmacopœia.)

Not Official.

LIQUOR FERRI PHOSPHATIS FORTIS.—Containing 8 grains per fluid drachm, of the anhydrous Phosphate, is made by dissolving 360 grains of Iron Wire in Phosphoric Acid, with sufficient water to make 12 ounces. The amount of acid used may vary according to the acidity desired; if that of B. P. 1885, then eleven ounces must be used. Six ounces has been suggested (*P.J.* xix. 255), but it can be made with considerably less than that.

SYRUPUS FERRI PHOSPHATIS COMPOSITUS (*B.P.C.*).—Iron Wire, free from oxide, 37½ grs.; Concentrated Phosphoric Acid (sp. g. 1·5), 1 fl. oz.: Distilled Water, 5 fl. drms.: dissolve by a gentle heat in a flask plugged with cotton-wool, the Iron being completely covered by the liquid.

Precipitated Carbonate of Calcium, 120 grs.; Concentrated Phosphoric Acid, 4 fl. drms.; Distilled Water, 2 ozs.: mix, and add Bicarbonate of Potassium, 9 grs.; Phosphate of Sodium, 9 grs.: filter and set aside.

Cochineal, 30 grs.; Distilled Water, 7½ ozs.: boil for fifteen minutes and filter, pouring over the filter a sufficient quantity of distilled water to produce 7 fl. ozs. of filtrate; to this add Refined Sugar, 11 ozs.: heat till dissolved and strain. When cold add the Iron and Calcium solutions and sufficient Distilled Water to produce 20 fl. oz.

Each fl. drm. = ½ grain Phosphate of Iron and ⅘ grain Phosphate of Calcium with small quantities of the Phosphates of Potassium and Sodium. It should be kept in bottles quite full.

Dose.—½ to 2 fluid drachms.

SQUIRE'S CHEMICAL FOOD.—The preparation made for many years by Parrish and imported by Squire, and subsequently purchased by Squire.

It contains Phosphate of Iron, Phosphate of Lime, Phosphate of Soda, and Phosphate of Potash.

Dose.—Half to one teaspoonful in water with meals.

A formula was published many years ago, but how far this has been a success is shewn by comparing the syrups commercially sold, all of them more or less emphatically stated to be made by the published formula.

In nine samples recently analysed, the Phosphate of Iron ranged from ·19 to ·66, the Phosphate of Lime from ·5 to 1·6, the total Phosphoric Acid from 1·5 to 4·7; these results are expressed in grains per fluid drachm.

Medicinal Properties.—A general tonic, specially indicated in scrofula and rickets.

As a tonic for pregnant women.—*L.M.R.* '88, 519.

SYRUPUS FERRI PHOSPHATIS C. QUINIA ET STRYCHNIA. (Dr. Easton's formula.)—Sulphate of Iron, 300 grs.; Phosphate of Soda, 360 grs; Sulphate of Quinia, 192 grs.; Diluted Sulphuric Acid, a sufficiency; Solution of Ammonia, a sufficiency; Strychnia, 6 grs.; Diluted Phosphoric Acid, 14 oz.; White Sugar, 14 oz. Dissolve the Sulphate of Iron in 1 oz. boiling Water, and the Phosphate of Soda in 2 oz. boiling Water. Mix the solutions, and wash the precipitated Phosphate of Iron till the washings are tasteless. With sufficient Diluted Sulphuric Acid dissolve the Sulphate of Quinia in 2 oz. Water. Precipitate the Quinia with Ammonia Water, and carefully wash it. Dissolve the Phosphate of Iron and the Quinia thus obtained, as also the Strychnia, in the Diluted Phosphoric Acid; then add the Sugar and dissolve the whole, and mix without heat. The above Syrup contains about 1 gr. Phosphate of Iron, 1 gr. Phosphate of Quinia, and $\frac{1}{32}$ gr. of Phosphate of Strychnia in each fluid drachm. The dose might therefore be a teaspoonful three times a day.

The quantity of Phosphate of Soda is not sufficient to precipitate the whole of the Iron, and therefore this Syrup does not contain the full quantity.

(U.S.; not in the others.)

SYRUPUS FERRI, QUININÆ ET STRYCHNINÆ PHOSPHATUM (*B.P.C.*).—Strychnine, in powder, 5 grs.; Concentrated Phosphoric Acid (sp.g. 1·5), 75 mins.; Distilled Water, 225 mins.: dissolve and add Phosphate of Quinine, 120 grs.: dissolve with a gentle heat and add Syrup of Phosphate of Iron sufficient to produce 20 fl. ozs. Mix thoroughly.

This syrup can be conveniently made by dissolving the Strychnine and Phosphate of Quinine (or an equivalent of Quinine alkaloid) in 2½ ozs. of Liquor Ferri Phosphatis Fortis and diluting to 20 ozs. with Simple Syrup.

Each fl. drm. = 1 grain Phosphate of Iron, ¾ grain Phosphate of Quinine, and $\frac{1}{32}$ grain of Strychnine.

Dose.—30 to 60 minims.

SYRUPUS FERRI PHOSPHATIS C. MANGANESIO.—Dissolve 12 grs. of Phosphate of Manganese in 1¼ oz. of Liquor Ferri Phosphatis Fortis and 30 mins. of Phosphoric Acid, then dilute to 20 ozs. with Simple Syrup.

This Syrup will contain in each fluid drachm ½ grain each of Anhydrous Phosphate of Iron and Anhydrous Phosphate of Manganese, and represents the Syrup given under a different formula in former editions.

Dose.—1 drm.

This can sometimes be taken when Syrup of Phosphate of Iron disagrees.

FERRI SULPHAS.

SULPHATE OF IRON.

$FeSO_4.7H_2O$, eq. 278.

Pale bluish-green oblique rhombic prisms, with little or no efflorescence.

Solubility.—1 in 1½ of Water: the solution rapidly oxidizes on exposure; insoluble in Alcohol and Proof Spirit, hence it cannot be dissolved in Tinctures.

Tests.—The aqueous solution gives a white precipitate with Chloride of Barium (Sulphate), one nearly white with Ferrocyanide of Potassium, and a deep blue with Ferricyanide of Potassium (Ferrous Salt), but none with Sulphuretted Hydrogen (absence of Copper and Ferric Salt). 42·1 grs. dissolved in Water acidulated with Sulphuric Acid continues to give a blue precipitate with Ferricyanide of Potassium until about 500 grain-measures of the volumetric solution of Bichromate of Potassium have been added (indicating about 100 per cent. of unoxidised Ferrous Sulphate).

(Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Norw., Port., Russ., Span., Swed., Swiss, and U.S.)

Medicinal Properties.—A powerful astringent, but is apt to irritate the stomach.

Dose.—1 to 5 grs. in pill, or recent solution.

5 grains, with 3 grains of Sulphate of Quinine, has been given four or five times a day, for enlarged spleen.

Preparations.

FERRI SULPHAS EXSICCATA. $FeSO_4, H_2O$, eq. 170.

Sulphate of Iron exposed in a porcelain or iron dish to a temperature of 212° F. (100° C.) until aqueous vapour ceases to be given off. Reduce to powder. Keep in stoppered bottles.

Prescribed in pills. 2½ grains, which are equal to 4 of the crystallized salt, make a nice pill with a mixture of equal parts of Liquid Glucose and Treacle.

Dose.—½ to 3 grs.

(Belg.; Dan., dried at 104°—122° F.; Dutch; Ger., dried at 212° F.; Russ., dried at 77°—86° F.; Swiss; U.S., dried at 300° F.; not in the others.)

LIQUOR FERRI PERSULPHATIS.

Sulphate of Iron, 8; Sulphuric Acid, ¾; Nitric Acid, ¾; Distilled Water, 12. Add the Sulphuric Acid to 10 of the water, and dissolve the Sulphate of Iron in the mixture with the aid of heat. Mix the Nitric Acid with the remaining 2 of the water, and add to this diluted acid warmed, the solution of Sulphate of Iron. Concentrate the whole by boiling, until, by the sudden disengagement of ruddy vapours, the liquid ceases to be black, and acquires a red colour. A drop of the solution is now to be tested, with Ferricyanide of Potassium, and if a blue precipitate forms, a few additional drops of Nitric Acid* should be added and the boiling renewed, in order that the whole may be converted into Persulphate of Iron. When the solution is cold, make up the quantity to 11 by the addition, if necessary, of Distilled Water.

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* A small quantity of Sulphuric Acid will be found equally efficient.

Introduced for making several preparations of Iron.

Tests.—Sp. g. 1·441. 1 fl. dr. diluted with 2 oz. Distilled Water gives upon the addition of an excess of Solution of Ammonia a precipitate which when well washed and incinerated weighs 11·44 grs. Diluted with ten volumes of water, it gives a white precipitate with Chloride of Barium, and a blue one with Ferrocyanide, but not with Ferricyanide of Potassium (absence of Ferrous Salt).

This solution is a good styptic; it mixes in all proportions with Water and Rectified Spirit.

(Dan., 1·395—1·405; Ger., sp. g. 1·428—1·430; Russ., sp. g. 1·400; Swiss, 1·317—1·319; U.S., sp. g. 1·320; not in the others.)

Not Official.

LOTIO FERRI SULPHATIS.—Sulphate of Iron, 3 grs.; Water, 1 oz.—*St. Bartholomew's Hospital.*

MISTURA FERRI LAXANS.—Sulphate of Iron, 2 grs.; Sulphate of Magnesia, 1 drm., Sulphuric Acid, 3 minims; Peppermint Water to 1 oz.—*St. Mary's Hospital.*

FERRI SULPHAS GRANULATA.

GRANULATED SULPHATE OF IRON.

$FeSO_4.7H_2O$, eq. 278.

Small granular crystals of a pale green colour, which are not so liable to become brown as those of the Ferri Sulphas.

Iron Wire, 4; Sulphuric Acid, 4; Distilled Water, 30; Rectified Spirit, 8. Pour the water on the iron placed in a porcelain capsule; add the acid, and when the disengagement of gas has nearly ceased, boil for ten minutes; filter the solution into a jar containing the spirit, stirring the mixture so that the salt shall separate in minute granular crystals. Pour off the liquid, and place the crystals on filtering-paper over porous bricks to dry by exposure to the atmosphere. Keep in stoppered bottles.

Solubility.—1 in 1½ of Water; insoluble in Rectified Spirit.

Tests.—The aqueous solution gives no precipitate with Sulphuretted Hydrogen, and one nearly white with Ferrocyanide of Potassium—indicating absence of Copper and Persulphate of Iron. 41·7 grains dissolved in Distilled Water acidulated with Sulphuric Acid continues to give a blue precipitate with Ferricyanide of Potassium until 500 grain-measures of the volumetric solution of Bichromate of Potassium have been added.

(Not in the other Pharmacopœias.)

Medicinal Properties.—Same as Ferri Sulphas.

Dose.—1 to 5 grs.

FERRUM REDACTUM.

REDUCED IRON.

Metallic Iron, with a variable amount of Oxide of Iron. A fine greyish-black powder, strongly attracted by the magnet, and exhibiting metallic streaks when rubbed with firm pressure in a mortar. Made by passing dry Hydrogen over Peroxide of Iron in a heated iron tube. It must be carefully preserved from the air.

It dissolves in Hydrochloric Acid with the evolution of Hydrogen, and without any smell of Sulphuretted Hydrogen, and the solution gives a light blue precipitate with Ferrocyanide of Potassium.

Test.—10 grains added to an aqueous solution of 50 grains of Iodine and 50 grains of Iodide of Potassium, and digested with them in a small flask at a gentle heat, leave not more than 5 grains undissolved, which should be entirely soluble in Hydrochloric Acid. Is easily ignited and converted into brown oxide.

(Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Norw., Port., Russ., Span., Swiss, and U.S.; not in Swed.)

Medicinal Properties.—It is one of the most powerful remedies in restoring the condition of the blood in all anæmic states of the system. It does not, however, possess the astringent properties of other preparations of Iron, and therefore cannot be used as a substitute in passive hæmorrhage. It is chiefly employed in chlorosis, amenorrhœa, chorea, and enlargement of the spleen following intermittent fever. There is no pulverulent state of Iron so convenient as this for children, as it has no taste, and a very small dose is required.

Dose.—1 to 5 grs. several times daily, in powder or pill, or for children ¼ to 1 gr. 1 grain of this is equal to 5 grs. of Ammonio-Citrate of Iron.

Preparation.

TROCHISCI FERRI REDACTI.

Lozenges made of Reduced Iron, Sugar, and Gum Acacia.

Each lozenge contains 1 gr. of Reduced Iron.

Dose.—1 to 6 lozenges.

FERRUM TARTARATUM.

TARTARATED IRON.

Syn. Ferri Potassio-Tartras.

Thin transparent scales of a deep garnet colour.

Solubility, 1 in 1 of Water, very sparingly in Spirit.

Tests.—The aqueous solution, acidulated with Hydrochloric Acid, gives a copious blue precipitate with Ferrocyanide, but none with Ferricyanide of Potassium (Ferric Salt). When the Salt is boiled with Solution of Soda, Ferric Hydrate separates, and the filtered solution, when slightly acidulated by Acetic Acid, gives as it cools a crystalline deposit. By incinerating 50 grains of this preparation at a red heat, and washing what is left with distilled water and again incinerating, a residue of Peroxide of Iron is obtained, weighing about 15 grains.

It always contains Ferrous Salt, which precipitates with Ferricyanide of Potassium; the Oxide left after incineration is strongly magnetic.

Dose.—5 to 10 grs.

(Belg., Tartras Ferrico-Potassicus; Dan. and Swed., Tartras Ferrico-Kalicus; Fr., Tartrate Ferrico-Potassique; Port., Tartrato de Potassa e de Ferro; Russ., Ferro-Kali Tartaricum; Span., Tartrato Ferrico-Potasico; Swiss, Tartarus Ferratus; U.S., Ferri et Potassii Tartras; not in the others.)

FICUS.

FIG.

The dried fruit of *Ficus Carica*, imported from Smyrna.

(Fr. Figue; Port. Figos Passados; Span. Higuera; U.S.; not in the other Pharmacopœias.)

Medicinal Properties.—Nutritious, laxative, and demulcent. Chiefly used medicinally in constipation. Cut open and heated, it is a convenient suppurative cataplasm.

Contained in Conf. Sennæ.

FILIX MAS.

MALE FERN.

The rhizome, with the persistent bases of the petioles of the perennial *Aspidium Filix-mas*, collected late in the autumn, and divested of its scales, roots, and all dead portions, and carefully dried with a gentle heat. Indigenous.

It should not be used more than a year old.

Only the green rhizome should be used: the brown stipes are inert. U.S.

(Austr., Belg., Dan., Dutch; Fr., Fougère; Ger., Hung., Norw.; Port., Feto Macho; Russ.; Span., Helecho Macho; Swed., Swiss; U.S., Aspidium.)

Medicinal Properties.—The powder of the rhizome is slightly tonic and astringent; chiefly used in the form of Liquid Extract as an anthelmintic in tænia.

Preparation.

EXTRACTUM FILICIS LIQUIDUM. *Syn.* Oil of Male Fern.

Male Fern, in coarse powder, 1; Ether, 2½, or a sufficiency: pack the male fern closely in a percolator and pass the ether slowly through it until it passes colourless; distil off the ether, and preserve the oily extract.

Pharm. Dose, 15 *to* 30 *mins.*

Dose.—60 to 90 minims in milk, or made into an **emulsion** with 1 to 2 drms. of very fresh mucilage, or ½ to 1 drm. of powdered Acacia, or ½ drm. of compound powder of Tragacanth, and with peppermint water or milk to form a 2 oz. draught; or in **capsules**, 15 minims in each. Best given on an empty stomach, and for tænia one-third part of the dose should be given at intervals of half an hour.

For larger doses than 90 minims, see *L.* '88, ii. 1037, and *B.M.J.* '89, i. 319.

(Austr., Ext. Filicis Maris; Belg., Dutch, Ger., Norw., and Swed., Ext. Filicis; Fr., Extrait de Fougère Mâle; Port., Extracto de Feto Macho Ethereo; Hung. and Russ., Extract. Filicis Maris Æthereum; Span., Aceite de Helecho; Swiss, Extractum Filicis Æthereum; U.S., Oleoresina Aspidii. All made with Ether. Not in Dan.)

FŒNICULI FRUCTUS.

FENNEL FRUIT.

The dried fruit of cultivated plants of *Fœniculum capillaceum.*

The ash was determined of Fruits (4 samples) 8·47, 8·93, 9·75, 7·70 per cent.; of Pulvis Fœniculi (6 samples) 24·64, 12·8, 9·90, 8·91, 13·0, 9·89 per cent., the first contained sand.

(Austr., Belg., Dan., Dutch; Fr., Fenouil Doux; Ger., Hung., Norw.; Port., Funcho; Russ.; Span., Hinojo; Swed., Swiss, and U.S.)

Medicinal Properties.—Stimulant, aromatic, and carminative. In action similar to Anise. Much employed as a corrigent of less agreeable medicines. In infantile subjects the infusion is frequently employed as an enema for flatus.

Used in the preparation of Pulvis Glycyrrhizæ Comp.

Preparation.

AQUA FŒNICULI.

Fennel Fruit, bruised, 1; Water, 20: distil 10. =(1 in 10).

Dose.—1 to 2 oz.

(Austr. and Swiss, 1 in 20; Belg., with Oil, 1 in 3000; Dan., Hung., and Swed., 1 in 10, Fr. and Port., 1 in 4; Ger., 1 in 30; Russ., with Oil, 1 in 1500; Span., 1 in 6; Dutch and U.S., with Oil 1 in 500; not in Norw.)

Not Official.

OLEUM FŒNICULI.—A volatile Oil distilled from Fennel. Sp. g, ·970.

Dose.—5 to 15 minims.

(Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Norw., Port., Russ., Span., Swed., Swiss, and U.S.)

Not Official.

FUCUS VESICULOSUS.

Bladder-wrack collected from the rocks by the seaside and dried.

(Belg., Helmintochorton; Fr., Varech Vesiculeux; Port., Bodelha; Span., Fuco Vejigoso; not in the others.)

Preparations.

EXTRACTUM FUCI.—Prepared by percolation with a mixture of Rectified Spirit, 2; Water, 1. Evaporate the resulting fluid to a stiff extract.

100 of dried Fucus yield about 16 of Extract.

Dose.—3 to 5 grs. in pill.

EXTRACTUM FUCI LIQUIDUM.—Dried Fucus Vesiculosus in No. 20 Powder, 16; percolate with a mixture of Rectified Spirit, 2; Water, 1; so that the resulting fluid shall measure 32.

Dose.—A teaspoonful, given for obesity; it also diminishes glandular swellings in scrofulous cases.

Smelling fresh seaweed is said to relieve hay asthma.

GALBANUM.

GALBANUM.

A gum resin obtained from *Ferula galbaniflua and F. rubricaulis*, and probably other species, imported from India and the Levant; in masses of greenish-yellow tears, translucent.

Usually heated to 212° F. (100° C.), and strained before using.

(Austr., Belg., Dan., Dutch, Fr., Ger., Norw., Port., Russ., Span., Swed., Swiss, and U.S.; not in Hung.)

Medicinal Properties.—Similar to Asafœtida, but less powerful. A stimulating expectorant. Chiefly used in chronic affections of the bronchial mucous membranes; externally as a plaster to indolent swellings.

Preparations.

EMPLASTRUM GALBANI.

Galbanum, 1; Ammoniacum, 1: melt together and strain, then add them to Yellow Wax, 1; Lead Plaster, 8, previously melted together, mix. =(1 in 11).

(A plaster more or less resembling this is in all the Pharmacopœias except Hung.)

PILULA GALBANI COMPOSITA. *See* PIL. ASAFŒTIDÆ COMPOSITA.

Not Official.

PIL. GALBANI COMP. (*U.S.*)—Galbaum, 3; Myrrh, 3; Asafœtida, 1; Syrup, *q.s.*

UNG. GALBANI COMP.—Galbanum Plaster, 4 oz.; Lead Plaster, 4 oz.; White Wax, 4 oz.; soft Extract of Opium, 1 drm.; Olive Oil, 20 oz.: melt together.

It is an excellent application for piles, boils, and carbuncles, for sore nipples and suppurating breasts.

Not Official.

GALIUM APARINE.

CLEAVERS, GOOSE-GRASS.

This old remedy for scrofula still finds occasional notice. Besides its external application as a poultice, the general form of administration is the juice of the plant in wineglassful doses several times a day, but as the Succus cannot be preserved without 25 p.c. of Rectified Spirit, the quantity of Alcohol involved would in many cases preclude its use. The most suitable preparation therefore is a **fluid Extract** prepared from the fresh plant.

GALLA.

GALLS.

Excrescences on *Quercus Lusitanica var. infectoria,* caused by the punctures and deposited ova of *Cynips Gallæ-tinctoriæ;* chiefly from the Mediterranean and the East Indies.

Solubility.—All the soluble matter of Galls is taken up by forty times their weight of boiling Water, and the residue is tasteless.

Galls contain 60 to 70 per cent. of Tannin or Tannic Acid, and 3 to 5 per cent. of Gallic Acid, to which their therapeutic qualities may be attributed.

(Austr., Belg., Dan., Dutch; Fr., Galle de Chêne d'Alep; Ger., Hung.; Port., Galha; Russ.; Span., Agalla; Swed., Swiss, and U.S.)

Medicinal Properties.—Powerfully astringent. Useful in hæmorrhages, as menorrhagia, hæmaturia, and hæmoptysis; also in increased mucous and other discharges. Locally to suppress hæmorrhage from the gums, nose, &c.; to lessen the discharge from mucous membranes, as in gleet, leucorrhœa, &c.

Dose.—(Of powder) 10 to 20 grs. several times a day.

Incompatibles.—The Mineral Acids, Salts of Iron and Lead, Sulphate of Copper, Nitrate of Silver, Carbonates of Potassium and Sodium, Lime Water, Tartar Emetic, Ipecacuanha, and Opium, Infusions of Cinchona, Calumba, and Cusparia.

Preparations.

ACIDUM GALLICUM.—*See* ACIDUM GALLICUM.

ACIDUM TANNICUM.—*See* ACIDUM TANNICUM.

TINCTURA GALLÆ.

Galls, in No. 40 powder, 1; Proof Spirit, 8: macerate for forty-eight hours with 6 of the spirit, agitating occasionally, pack in a percolator, let it drain, and then pour on the remaining spirit; when it ceases to drop, press the marc and add Proof Spirit to make 8.

Dose.—½ to 2 drms.

=(1 in 8).

(Austr., Dutch, Fr., Ger., Russ., and Swiss, 1 and 5; Hung. and U.S., 1 in 5 (all by weight); not in the others.)

UNGUENTUM GALLÆ.

Galls, in very fine powder, 80 grs.; Benzoated Lard, 1 oz.: mix. =(1 in 6½).

(U.S., 1 in 10; not in the others.)

A useful application for hæmorrhoids.

UNGUENTUM GALLÆ CUM OPIO.

Ointment of Galls, 1 oz.; Opium, in powder, 32 grs.; mix. =(Opium, 1 in 14⅔).

(Not in the other Pharmacopœias.)

Applied to painful hæmorrhoids.

Not Official.

DECOCTUM GALLÆ.—Bruised Galls, 2½; Distilled Water, 40: boil to 20 and strain. = (1 in 8).

An astringent lotion to suppress hæmorrhage from the gums or nose, and to lessen discharges from mucous surfaces.

SUPPOSITORIA GALLÆ.—Contain 5 grs. powdered Galls and 1 gr. Opium in each.

Not Official.

GARCINIA PURPUREA.

KOKUM BUTTER TREE.

Grows in the forests of Malabar, the Concans, and other parts of the Madras Peninsula.

The oil of the seeds (*Kokum Butter*) is obtained by first exposing the seeds for some days to the action of the sun to dry; they are then bruised and boiled in water, the oil collects on the surface and on cooling contracts into a solid cake. It melts at 98° F. The seeds yield about 10 per cent. of oil.

It is used in India in the preparation of ointments, suppositories, &c.

Not Official.

GAULTHERIÆ OLEUM.

Syn. OIL OF WINTERGREEN, OIL OF BIRCH.

Colourless, yellow or reddish, of a peculiar aromatic odour and a slightly acid reaction.

The bulk of the Oil sold under this name is Oil of Birch (*Betula lenta*) or a mixture of the Oils of Wintergreen and Birch, but a limited amount of Pure Oil of Wintergreen (*Gaultheria procumbens*) can be obtained.

Oil of Birch is pure Salicylate of Methyl, the Oil of Wintergreen contains, in addition, a small quantity of Terpene, sp. g. 0·940, with an odour resembling Black Pepper.—Power & Werbke, *P.J.* xix. 349, and Squibbs' *Ephemeris*, p. 950.

Sp. g. at 15° C.—Pure Oil of Birch, 1·182, Pure Oil of Wintergreen, 1·175—1·176.

Solubility.—Readily soluble in Alcohol, Ether, and Chloroform.

Tests.—When heated to about 80° C. the Oil should not yield a colourless distillate having the characteristics of Chloroform or of Alcohol. On mixing 5 drops of the Oil with 5 drops of Nitric Acid, the mixture should not acquire a deep red colour and should not solidify to a dark red resinous mass (absence of Oil of Sassafras).

(Fr. and U.S.; not in the other Pharmacopœias.)

Medicinal Properties.—A valuable remedy in acute rheumatism. Used largely as a flavouring agent in America, more particularly in dentifrices.

Dose.—10 to 15 minims every four hours, given suspended in Water or in Sugar and Water.

Preparation.

SPIRITUS GAULTHERIÆ (U.S.).—Oil of Gaultheria 3; Alcohol 97: both by weight. Mix.

Not Official.

GELATINE.

Gelatine is prepared from selected pieces of Calves' Pelt, which are treated by high-pressure steam; the gelatine which is dissolved out is spread on thin plates and when dry is cut into shreds for sale; also by boiling in water bones from which the mineral matter has been extracted by acid.

(Austr., Fr., Hung., Norw., Port., Russ., and Swed.; not in the others.)

COPYING GELATINE.—Soak 1 of Gelatine in 1 of Water; melt in a water bath with gentle heat; strain and add 5 of Glycerine, and pour the solution into a shallow dish; it forms, when set, the Hectograph plate; the note is written with Judson's violet dye, and placed face downwards on it, gently passed over with the fingers, and then taken off. The impression is left, and plain note paper applied and pressed upon, in succession, takes numerous facsimiles. Hot water and a sponge remove the impression when done with.

Gelatine dissolved in Glycerine is used for putting up microscopical specimens.

GELATINE BASIS FOR PESSARIES AND SUPPOSITORIES.—Soften 1 oz. of Gelatine by allowing it to soak in 1 oz. of water until it is absorbed, then dissolve in $3\frac{1}{2}$ fl. oz. of Glycerine by the heat of a water bath, and allow it to cool and solidify.

This can be medicated by melting it over a water bath and suspending or dissolving in it substances in fine powder, and then pouring the mixture into moulds.

GLYCO-GELATINE (*T.H.*).—Refined Gelatine, 1 oz.; Glycerine (by weight), $2\frac{1}{2}$ ozs.; Ammoniacal Solution of Carmine, a sufficiency; Orange-flower Water, $2\frac{1}{2}$ ozs. Soak the Gelatine in the Water for 2 hours, then heat in a water-bath till dissolved; add the Glycerine and stir well together. Let the mixture cool, and when nearly cold add the Carmine Solution; mix till uniformly coloured, and set aside to solidify.

This mass is used for making the various medicated pastils; the various substances are rubbed with an equal quantity of Glycerine, and added to the mass when melted over a water-bath.

GELSEMIUM.

YELLOW JASMINE.

The dried rhizome and rootlets of *Gelsemium nitidum.*

The plant grows in the Southern States of North America.

Contains a crystallisable principle Gelseminine, most of the salts of which, as generally met with, are amorphous except the Hydrochlorate, which is crystalline dose $\frac{1}{64}$ to $\frac{1}{32}$ grain.

(Belg., Dutch, Span., and U.S.; not in the other Pharmacopœias.)

Medicinal Properties.—A respiratory and spinal sedative. Useful in dental neuralgia, not arising from inflammation. Internal administration causes contraction of the pupil; local application to the eye dilates the pupil.

Dose.—5 to 30 grs.

Preparations.

EXTRACTUM GELSEMII ALCOHOLICUM.

Macerate Gelsemium (in No. 60 powder) 16, with Rectified Spirit 40, in a closed vessel forty-eight hours; pack in a percolator and let it drain, and then continue the percolation with Water until 40 of liquor have been collected: evaporate the percolate by a water bath to a suitable consistence.

Dose.—$\frac{1}{2}$ to 2 grs.

(Belg.; Fr. from the leaves; not in the others. U.S. Fluid Extract, 1 in 1.

TINCTURA GELSEMII.

Gelsemium, in No. 40 powder, 1; Proof Spirit, 8: macerate for forty-eight hours with 6 of the Spirit, agitating occasionally; pack in a percolator, let it drain, and then pour on the remaining Spirit; when it ceases to drop, press the marc, and add Proof Spirit to make 8. =(1 in 8)

Dose.—5 to 20 minims.

(Belg., 1 and 5; Dutch, 1 and 10; U.S., 15 in 100; not in the others.)

Antidotes.—Emetic of Mustard and Water, Atropine, Morphine, Aromatic Spirit of Ammonia, Brandy, and Digitalis.

A girl nine years old was killed in two hours by a dose of two drachms of the tincture.

GENTIANÆ RADIX.

GENTIAN ROOT.

The dried root of the perennial herb *Gentiana lutea*, collected in the mountainous districts of Central and Southern Europe.

The active principle Gentiopicrin is a neutral crystalline body, soluble in Water and diluted Spirit, insoluble in Ether.

(Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Norw., Port., Russ., Span., Swed., Swiss, and U.S.)

Medicinal Properties.—Used in cases of atony of the stomach, or when a general tonic is required.

Dose.—(Of the powder) 10 to 40 grs. This powder is prescribed in pills when a large quantity of Essential Oil is given, to absorb it.

Incompatibles.—Sulphate of Iron, Nitrate of Silver, and Lead Salts.

Preparations.

EXTRACTUM GENTIANÆ.

Gentian Root, sliced, 1; boiling Distilled Water, 10: infuse two hours, then boil fifteen minutes, press and strain, and evaporate over a water bath to a pilular consistence.

A good substance to add to powders to form them into pills.

Dose.—2 to 10 grs.

(Austr., Belg., Dan., Dutch, Fr., Ger., Norw., Port., Russ., Span., Swed., Swiss, and U.S., with cold water; Hung., with hot water; U.S., also Fluid Extract, 1 in 1.)

INFUSUM GENTIANÆ COMPOSITUM.

Gentian Root, sliced, 55 grs.; Bitter Orange Peel, cut small, 55 grs.; fresh Lemon Peel, cut small, $\frac{1}{4}$ oz.; Boiling Distilled Water, 10 oz.; infuse half an hour and strain. =(1 in 80).

Gentian and Orange Peel reduced from 60 to 55 grs., and the time reduced from 1 hour to $\frac{1}{2}$ hour.

Dose.—1 to 2 oz.

(Fr. (Tisane) Gentian Root 1, cold Water, 200; Swed., similar to Brit.; not in the others.)

TINCTURA GENTIANÆ COMPOSITA.

Gentian Root cut small and bruised, $1\frac{1}{2}$; Bitter Orange Peel, cut small and bruised, $\frac{3}{4}$; Cardamom Seeds, bruised, $\frac{1}{4}$; Proof Spirit, 20: macerate for forty-eight hours with 15 of the spirit, agitating occasionally, pack in a percolator, let it drain, and then pour on the remaining spirit; when it ceases to drop, press the marc and add Proof Spirit to make 20. =(1 in 13⅓).

Dose.—½ to 2 drms.

(Port., twice as strong as Brit.; U.S., 1 in 12·5; not in the others; Bolg., Dan., Dutch, Fr., Ger., Norw., Port., Russ., Span., and Swiss, have a simple Tincture, 1 and 5; all by weight.)

Not Official.

MISTURA GENTIANÆ. B. P. 1867.

Gentian Root, sliced, ¼ oz.; Bitter Orange Peel, bruised, 30 grs.; Coriander, 30 grs.; Proof Spirit, 2 oz.; cold Distilled Water, 8 oz.; macerate the ingredients in the spirit for two hours, then add the water. Infuse for two hours and strain.

Dose.—½ to 1 oz.

(Is not strong enough to keep without change for more than fifteen or sixteen days.)

Not Official.

LIQUID GLUCOSE.

As met with in commerce, it is clear, almost colourless, devoid of smell, and resembles in consistency Canada Balsam.

Alone, or mixed with equal parts of Treacle, it forms an excellent excipient for pills.

GLYCERINUM.

GLYCERINE.

A sweet principle, $C_3H_5(HO)_3$, eq. 92, obtained from fats and fixed oils by saponification or the action of superheated steam.

Glycerine is always produced during the alcoholic fermentation of Sugar to the extent of 3 per cent. of the Sugar employed, and consequently is present in all fermented liquids.

A clear colourless fluid, oily to the touch, without odour, of an intensely sweet taste. It cannot be distilled without decomposition except in a current of steam; when decomposed by heat it evolves intensely irritating vapours.

Solubility.—In all proportions with water and Alcohol, but insoluble in Chloroform, Ether, and Oils.

It possesses great powers as a solvent, and is an excellent excipient for many medicinal substances.

The following table is taken from Watts' Dictionary, 2nd supp. p. 563.

100 parts by weight of Glycerine dissolve at ordinary temperatures.

Parts by weight.	
20	Acid Arsenious.
20	Acid Arsenic.
10	Acid Benzoic.
10	Acid Boric.
15	Acid Oxalic.
50	Acid Tannic.
40	Alum.
20	Ammonium Carbonate.
20	Ammonium Chloride.
5·5	Antim. Pot. Tartrate.
3	Atropine.
33	Atropine Sulphate.
10	Barium Chloride.
2·2	Brucine.
5	Calcium Sulphide.
0·5	Cinchonino.
6·7	Cinchonine Sulphate.
10	Copper Acetate.
30	Copper Sulphate.
1·9	Iodine.
20	Lead Acetate.
7·5	Mcrcuric Chloride.
27	Morcuric Cyanido.
0·45	Morphino.
20	Morphino Acotate.
20	Morphine Hydrochlorate.

Parts by weight.	
0·2	. . Phosphorus.
50	. . Potassium Arseniate.
3·5	. . Potassium Chlorate.
25	. . Potassium Bromide.
32	. . Potassium Cyanide.
40	. . Potassium Iodide.
0·5	. . Quinine.
0·25	. . Quinine Tartrate.
50	. . Sodium Arseniate.
60	. . Sodium Biborate.
8	. . Sodium Bicarbonate.
98	. . Sodium Carbonate.
20	. . Sodium Chlorate.
0·1	. . Sulphur.
0·25	. . Strychnine.
22·5	. . Strychnine Sulphate.
50	. . Urea.
1	. . Veratrine.
50	. . Zinc Chloride.
35	. . Zinc Sulphate.

Test.—Sp. g. 1·250, and contains 5 per cent. of Water. Found in commerce, 1·260.

Its solution is not affected by Nitrate of Silver, Sulphydrate of Ammonium, Oxalate of Ammonium, or Chloride of Barium, and does not alter the colour of moistened blue or red litmus paper. Shaken with an equal volume of Sulphuric Acid, no colouration, or only a very slight straw colouration, should result. When gently heated with diluted Sulphuric Acid, no rancid odour is produced. When boiled with Water and solution of Potash, it should not turn brown, indicating absence of Glucose.

Arsenic has been found in German Glycerine, and the following test has been proposed: paper moistened with a 50 per cent. solution of Nitrate of Silver, when exposed to Hydrogen Gas evolved by adding Zinc to a mixture of 2 c. c. of Glycerine with 3 c.c. of Hydrochloric Acid (sp. g. 1·124), should not within 15 minutes show any yellow spots becoming black upon being moistened with Water.—*P.J.* xix. 865.

It has been suggested to use a saturated solution of Mercuric Chloride in the place of Nitrate of Silver.—*P.J.* xx. 277.

(Austr. and U.S., sp. g. 1·250; Belg., sp. g. 1·240; Dan., sp. g. 1·230; Dutch, Norw., Russ., and Swed., sp. g. 1·230 to 1·250; Fr., sp. g. 1·242; Ger. and Hung., sp. g. 1·225—1·235; Port. and Span., sp. g. 1·260; Swiss, sp. g. 1·227—1·230.)

It may be obtained of a specific gravity of 1·270, and even of 1·280, though with great difficulty; this very concentrated state is never required in medicine.

Medicinal Properties.—A mild antiseptic. Internally it is given in coughs, and is recommended as an **anal injection** for constipation. 30 minims, or the same diluted with an equal quantity of Water, produces an evacuation very soon after the injection; also combined with Gelatine to form a **suppository** for the same purpose. It prevents the formation of wind and acidity when taken in 1 or 2 drachm doses, and does not hinder digestion (*L.* '80, ii. 6); recommended in trichinosis (*L.M.R.* '81, 193.) It has been proposed as a substitute for Cod-liver Oil, but its nutrient properties are far inferior. It is sometimes employed as a sweetening agent in the place of Syrup.

Externally in skin diseases, as pityriasis, herpes, eczema, psoriasis, prurigo, and lichen. Excellent for chilblains and chapped hands.

Introduced into the ear on cotton-wool, it relieves deafness arising from dryness of the external meatus.

Used in poultices ($\frac{1}{14}$ or $\frac{1}{16}$), it keeps them soft for a long time.

Dose.—10 minims to 1 drm. 1 to 2 drms. Br. Ph.

Preparations.

GLYCERINUM ACIDI CARBOLICI	1 in 4½.
GLYCERINUM ACIDI GALLICI	1 in 4½.
GLYCERINUM ACIDI TANNICI	1 in 4½.
GLYCERINUM ALUMINIS	1 in 5½.
GLYCERINUM AMYLI	1 in 8½.
GLYCERINUM BORACIS	1 in 6¾.
GLYCERINUM PLUMBI SUBACETATIS	1 in 2½.
GLYCERINUM TRAGACANTHÆ	1 in 4⅔.

The formulas for these are given under the several names quoted.

Used in the preparation of Extractum Cinchonæ Liquidum, of all Lamellæ, Linimentum Iodi, Linimentum Potassii Iodidi c. Sapone, Mel Boracis, Pilula Aloes et Myrrhæ, Pilula Rhei Composita, Pilula Saponis Composita, Tinctura Kino and Unguentum Iodi.

Not Official.

UNGUENTUM GLYCERINI.—*See* GLYCERINUM AMYLI.

GLYCERINE WITH ROSE WATER.—Glycerine, 1; Rose Water, 3: mix.

GLYCEROLE OF THE HYPOPHOSPHITES OF LIME, POTASH, AND SODA.—Hypophosphite of Lime, 1; Hypophosphite of Potash, 1; Hypophosphite of Soda, 1. Dissolve these in 40 of Water, filter, and add Sugar, 40; Orange-flower Water, 2; Cherry-laurel Water, 2: dissolve, and add Glycerine, 12, and strain.

Dose.—1 or 2 drms.

GELATINE BASIS FOR PESSARIES AND SUPPOSITORIES, *see* GELATINE.

EXCIPIENT FOR PILLS.—Glycerine, Syrup and Mucilage of Acacia equal parts. Glycerine by itself is too hygroscopic.

GLYCYRRHIZÆ RADIX.

LIQUORICE ROOT.

The root or underground stems or stolons of the perennial herb *Glycyrrhiza glabra*, fresh and dried; cultivated in England.

(In all the Pharmacopœias; Belg., Dutch, Fr. (Réglisse), Port. (Alcaçus) Span. (Regaliz), Swiss, and U.S., *G. glabra*; Russ., *G. echinata*; Austr., Dan., Ger., Hung., Norw., and Swed., both.)

Medicinal Properties.—An excellent demulcent as a decoction in catarrhal affections, irritation of the mucous membrane of the bowels and urinary passages. A useful adjuvant to decoctions of bitter or irritating vegetable substances; is an ingredient in Compound Decoction of Aloes. In the form of extract and its solution it is a domestic remedy for cough.

Contained in Conf. Tereb., Dec. Sarsæ Co., Inf. Lini, Pilula Ferri Iodidi, Pil. Hydrargyri.

Preparations.

EXTRACTUM GLYCYRRHIZÆ.

Liquorice Root, in No. 20 powder, 1; cold Distilled Water, 5: macerate the root in half of the water for twelve hours, strain and press; again macerate the pressed marc with the remainder of the water for six hours, strain and press; mix the strained liquors; heat to 212° F. (100° C.), strain through flannel, and evaporate over a water bath to a pill consistence.

Dose.—½ to 1 drm.

(Austr., Belg., Dan., Fr. (Ext. Réglisse) Hung., Norw. ,Port., Span., Swed., and Swiss, from root with cold water; Dutch, with Water and Ammonia; Austr., Belg., Dan., Dutch, Fr., Hung., Norw., Russ., Swed., Swiss, and U.S., also the crude extract in sticks (*Succus Liquiritiæ*).)

Contained in Confect. Sennæ, Decoctum Aloes Co., Tinct. Aloes, Trochisci Opii.

EXTRACTUM GLYCYRRHIZÆ LIQUIDUM.

Process the same as for Extractum Glycyrrhizæ, except that the strained liquid is to be evaporated until, when cold, its sp. g. is 1·160, then add one-sixth of its volume of Rectified Spirit, let it stand for twelve hours, and filter.

2 fluid ounces of this = 1 oz. of solid extract.

It now contains more Spirit.

Dose.—1 drm.

(U.S. Liquorice Root percolated with a mixture of Dilute Ammonia, and Water.)

Used in the preparation of Mistura Sennæ Composita, and Tinctura Chloroformi et Morphinæ.

PULVIS GLYCYRRHIZÆ COMPOSITUS.

Syn. PULVIS LIQUIRITIÆ COMPOSITUS, PULVIS PECTORALIS KURELLÆ.

Senna, in fine powder, Liquorice Root, in fine powder, of each 2; Fennel Fruit in fine powder, Sublimed Sulphur, of each 1; Refined Sugar, in powder, 6. Mix and pass through a fine sieve.

NOTE.—This preparation was put into the British Pharmacopœia 1874 because the German one was much prescribed; but in consequence of the formula being altered, it was incumbent on the chemist to keep both formulas. Brit. Pharm. 1885 have adopted the German formula, which has been given as a Not Official in the Companion since 1873.

Dose.—A teaspoonful or more for adults, less in proportion for children, as a mild aperient.

(Same as Austr., Dutch, Ger., Russ., and Swiss; Belg. and U.S., almost the same; not in the others.)

Not Official.

ELIXIR E SUCCO GLYCYRRHIZÆ, *seu* **ELIXIR PECTORALE**, Ger. and Russ. —Purified Extract of Liquorice, 1; Fennel Water, 3; ♆ Anisated Liquid Ammonia, 1 (all by weight): mix.

♆ Oil of Anise, 1; Rectified Spirit, 24; Liquor Ammoniæ, 5 (all by weight): Ger.
Oil of Anise, 1; Rectified Spirit, 32; Liquor Ammoniæ, 8 „ „ „ ; Russ.

GLYCYRRHIZINUM AMMONIATUM, Fr. and U.S.—A scale preparation made by treating Liquorice Root with Water and Water of Ammonia, and adding Sulphuric Acid to the liquor so long as a precipitate is produced; collect this and wash it with cold Water; redissolve in Dilute Ammonia and spread on glass plates to dry.

GOA POWDER.—*See* CHRYSAROBINUM.

GOSSYPIUM.

COTTON WOOL.

The hairs of the seed of *Gossypium barbadense,* and other species of Gossypium, from which fatty matter and all foreign impurities have been removed.

Tests.—Inodorous and tasteless. It should readily be wetted by water, to which it should not communicate either an alkaline or acid reaction. On ignition in air it burns leaving less than 1 per cent. of ash.

U.S. Soluble in an Ammoniacal Solution of Sulphate of Copper.

(Dutch and Ger., Gossypium Depuratum; Port., Algodoeiro; Span., Algodon; U.S.; Fr., Coton, not washed; not in the others.)

Used to shield burns and scalds from contact of air.

Used in the preparation of Pyroxylin.

Cotton wool is medicated with Carbolic Acid, Salicylic Acid, Eucalyptol, Thymol, Arnica, Glycerine, Perchloride of Iron, Iodine, and with Iodoform.

Professor Tyndall introduced cotton wool as a filter in respirators.

Mouth and Nose Protector.—For use in poisonous and injurious trades. We exhibited this respirator at the International Health Exhibition, and obtained for it a bronze medal. It consists of layers of washed and sterilised cotton wool placed between perforated zinc and perforated cardboard, formed into a pliable respirator which covers the mouth and nose.

Not Official.

GOSSYPII RADICIS CORTEX.

The bark of the root of *Gossypium herbaceum*, and of other species of Gossypium. (U.S.; not in the others.)

Preparations.

TINCTURA GOSSYPII.—Dried bark of the root of the cotton plant, 1; percolate with sufficient Proof Spirit to produce 4.

Dose.—1 drm. three times a day as an emmenagogue and parturient.

EXTRACTUM GOSSYPII FLUIDUM (U.S.), 1 in 1, made with Glycerine and Alcohol.

GRANATI RADICIS CORTEX.

POMEGRANATE ROOT BARK.

The dried bark of the root of *Punica granatum*; chiefly imported dried from the south of Europe.

(Austr., Belg., Dan., Dutch; Fr. Grenadier; Ger. Hung.; Port. Romeira; Russ.; Span. Granado; Swiss, and U.S. Not in Norw. and Swed.)

Medicinal Properties.—Astringent and anthelmintic. It is considered effective in expelling tape-worm. Both in a green and dry state it is found equally effective in India. The dried is imported.

Incompatibles.—Alkalies, Lime Water, Metallic Salts, Gelatine.

Preparation.

DECOCTUM GRANATI RADICIS.

Pomegranate Root Bark, sliced, 1; Distilled Water, 20: boil to 10, and strain, making the strained product up to 10, if necessary by pouring Distilled Water over the contents of the strainer.

B. P. **Dose.**—2 to 4 oz. =(1 in 10).

(Belg. 1 and 6, boil to 4; Fr. Apozème, 1 and 12½, boil to 9; Port. 1 and 7½ boil to 5; Span. 1 in 8. Not in the others.)

Not Official.

An excellent remedy for tape-worm is as follows:—

Bruised Root-bark of Pomegranate, 2 oz; Boiling Water, 24 oz.: macerate for 24 hours, and then boil till reduced to 18 oz. A third part early in the morning, a third part again in half an hour, and the remainder in another half-hour. A dose of Castor Oil should have been taken the previous morning, and solid food abstained from on that day. This rarely fails to bring away the entire worm in two hours, and the head at the thinnest end should be diligently sought for.

EXTRACTUM GRANATI.—Exhaust Pomegranate Root Bark with Proof Spirit, distil off the Spirit and evaporate to the consistence of an Extract.

10 Root-bark yields 3½ Extract.

(Austr., Belg., Dutch, Fr., Hung., Port., Russ., and Span.; not in the others.)

PELLETIERINÆ SULPHAS.—A viscid liquid.

Dose.—6 grains prescribed with 7 grains of Tannic Acid.

PELLETIERINÆ TANNAS.—A yellowish amorphous powder prepared from Pomegranate Bark. Soluble 1 in about 700 of water, 1 in 80 of Alcohol. It is given as a remedy for tapeworm in doses of 10 to 20 grains followed by Castor Oil.

Not Official.

GRINDELIA.

The leaves and flowering tops, *Grindelia robusta* and *Grindelia squarrosa* from California.

The drug as imported into this country is not *G. Robusta*, but *G. Squarrosa*, but it is quite equal to that species in the amount of resin it contains, and indeed appears to be one of the richest in medicinal properties of the whole genus (*P. J.*, viii. 787).

(U.S.; not in the others.)

Medicinal Properties.—Has been recommended in asthma, hay fever, bronchitis, and whooping-cough.

Preparations.

EXTRACTUM GRINDELIÆ.—A Rectified Spirit percolate, distilled and evaporated to an Extract. 100 yield 15 parts of Extract.

Dose.—3 grains three times a day.

EXTRACTUM GRINDELIÆ LIQUIDUM (*B.P.C.*).—Grindelia, in No. 20 powder, 20; percolate with Rectified Spirit, reserve the first 17, distil off the Spirit from the remainder, and evaporate to a soft extract, dissolve this in the reserved portion and add enough Rectified Spirit to make 20.

This is the U.S. P. process.

Dose.—10 to 20 mins. every half-hour until relief is obtained.

GUAIACI LIGNUM.

GUAIACUM WOOD.

The heart-wood of *Guaiacum officinale*, or of *Guaiacum sanctum*.

Imported from St. Domingo and Jamaica.

For use in Pharmacy the wood, as usually imported, should be deprived of its sap-wood, and the heart-wood reduced to the form of chips, raspings, or shavings.

Nitric Acid applied to the dark or central wood (heart-wood) produces a bluish-green colour: this part is considered to be the most active; it yields about 26 per cent. of resin.

(In all the Pharmacopœias, except Dutch and Hung.)

Not often prescribed alone.

Contained in Decoctum Sarsæ Compositum.

GUAIACI RESINA.

GUAIACUM RESIN.

The resin obtained from the stem of *Guaiacum officinale*, or of *Guaiacum sanctum*, by natural exudation, by incision, or by heat.

In large masses or in tears of a brownish or greenish-brown colour; fractured surface resinous, translucent at the edges.

When freshly powdered it is almost white, but soon changes to green on exposure to air.

On dry distillation it yields Guaiacol similar to that found in Creasote.

Solubility.—About 90 per cent. is soluble in Alcohol, Ether, Chloroform, Aromatic Spirit of Ammonia, and Alkaline solutions; almost insoluble in Benzin.

Tests.—A solution in Rectified Spirit strikes a clear blue colour when applied to the inner surface of a paring of raw potato; or when paper moistened with the solution is exposed to the fumes of Nitric Acid it becomes blue.

(Austr., Belg., Dan., Fr. (Gayac Resine), Hung., Norw., Port., Russ. Span., Swed., Swiss, and U.S.; not in Dutch or Ger.)

Medicinal Properties.—Stimulant, diaphoretic, and alterative. It is employed in chronic forms of rheumatism. It is useful in tonsillitis, also in dysmenorrhœa.

Generally prescribed in composition with other medicines.

Dose.—10 to 30 grs. three or four times a day until it causes hot sweating, with or without purging.

Incompatibles.—Mineral Acids, Spirit of Nitrous Ether.

Contained in Pilula Hydrargyri Subchloridi Composita.

Preparations.

MISTURA GUAIACI.

Guaiacum Resin, in powder, 2; Sugar, 2; Gum Acacia in powder, 1; Cinnamon Water, 80: triturate, adding the Cinnamon Water gradually.

Dose.—½ to 2 oz. =(1 in 40).

(Swed. (Emulsio Guaiaci) 1 in 25 with Peppermint Water. Not in the other Pharmacopœias.)

Note.—Gum Acacia does not suspend the Guaiacum well. It falls, and forms a compact sediment, which is difficult to disturb by shaking. If one-fourth the quantity of Tragacanth is used instead, it answers well; with the latter the colour of the mixture does not change so rapidly nor to the same extent.

TINCTURA GUAIACI AMMONIATA.

Macerate Guaiacum Resin, in powder, 4, with Aromatic Spirit of Ammonia, 15, for seven days, filter, and wash the filter with sufficient Aromatic Spirit of Ammonia to make 20. =(1 in 5).

The formula for Aromatic Spirit of Ammonia has been altered.

Dose.—½ to 1 drm., with 1 drm. of mucilage or yolk of egg, to form an emulsion.

(U.S., similar to Brit.; Dan., Norw., Russ., Swed., and Swiss, Guaiacum Resin 3, Aqua Ammoniæ (sp. g. ·960) 5, and Spirit 10, by weight; Port., Guaiacum Resin 3, Liquid Ammonia (sp. g. ·916) 3, Spirit 14; not in the others.)

Not Official.

TINCTURA GUAIACI.—Guaiacum Resin, 1; Rectified Spirit, 5: digest seven days.

(Austr., Belg., Dan., Fr., Hung., Russ., Span., and U.S. (Resin) 1 and 5; Belg., Port., Span., and Swiss (Wood) 1 and 5, all by weight; not in the others.)

TROCHISCI GUAIACI (*T.H.*).—Made with Black Currant Paste. Each lozenge contains 2 grains of Guaiacum. A specific in arresting crescent inflammation of the tonsils.

Not Official.

GUARANA.

The seeds of *Paullinia sorbilis* dried in the sun, and then roasted and reduced to a fine powder; this is moistened with a little water, exposed to the night dew, and when got into a hard paste is rolled into cylinders; these are further dried in the sun or in the chimneys of the huts. It is exported from Brazil.

True Guarana is very hard, heavy, and, when powdered, is reddish-grey, whilst the sophisticated is much lighter in colour; it contains about 4 per cent. of an alkaloid generally considered to be identical with Caffeine, but producing modified physiological effects.

(Austr., Belg., Fr., Hung., Port., Russ., Span., Swiss, and U.S.; not in the others.)

Medicinal Properties.—It is used chiefly for curing sick headache, but is also useful in diarrhœa, dysentery, and as a tonic and stomachic in convalescence.

Dose.—30 grains, and repeated if necessary in 2 hours.

Preparations.

TINCTURA GUARANÆ.—Guarana, 1; Rectified Spirit, 4.

Dose.—1 to 2 drms. in water.

EXTRACTUM GUARANÆ FLUIDUM (U.S.).—1 equals 1 of Guarana made with Alcohol (sp. g. ·877)

ELIXIR GUARANÆ (*B.P.C.*).—Guarana, in No. 60 powder, 4 ozs.; Light Magnesia, ½ oz.; Oil of Cinnamon, 6 mins.; Syrup, 2 ozs.; Proof Spirit, a sufficiency. Mix the powders and moisten them with 3 ozs. Proof Spirit; after 24 hours, mix with 8 ozs. of coarse sand and percolate with Proof Spirit until 16 ozs. are obtained, then press. To the percolate add the Syrup and Oil of Cinnamon, and make up to 20 ozs. with expressed liquid previously reduced by evaporation if necessary.

Dose.—30 to 120 minims.

Not Official.

GUMMI RUBRUM.

An exudation from the bark of *Eucalyptus rostrata*, imported from Australia. Solubility, of 100 parts 90 are dissolved by cold Water, the solution being clear. 27 parts of Isinglass precipitate all the astringent matter.

This gum adheres with great pertinacity to the mucous surfaces, and it is probably on this account that its astringency is more effective than that of Catechu, Kino, etc., although it contains less amount of astringent matter. Sir Ranald Martin introduced it into European practice.

Medicinal Properties.—4 to 6 grs. given every 2 or 4 hours are useful in diarrhœa and dysentery: sometimes given with Extractum Belæ Liquidum.

Preparations.

EXTRACTUM GUMMI RUBRI LIQUIDUM.—Red Gum, 7; Water, 21: dissolve, strain, and add Rectified Spirit, 1.

Dose.—30 to 60 minims in a wineglassful of water.

An excellent styptic; injected into the nostril, at once stays bleeding of the nose.

A tablespoonful in a pint of water forms an astringent injection for the vagina or rectum; it also forms an astringent lotion for the eyes.

SUPPOSITORIA GUMMI RUBRI.—Powdered Red Gum, 5 grs.; Extract Nux Vomica, 1 gr.; Stearine, *q.s.*

Excellent for relaxed intestines and sphincter.

SYRUPUS GUMMI RUBRI.—Liquid Extract, 20; Sugar, 12: dissolve.

Dose.—30 to 60 minims.

TINCTURA GUMMI RUBRI.—Gum, 1; Rectified Spirit, 4: digest and strain. Mixes with water without becoming turbid.

If made with Proof Spirit it is very apt to become a solid jelly.

Dose.—20 to 40 minims.

1 part of this with 6 or 8 of water, with Diluted Sulphuric Acid or with Syrup of Lemons for gargles.

TROCHISCI GUMMI RUBRI.—Lozenges for relaxed throat.

GUTTA PERCHA.

GUTTA PERCHA.

The concrete juice of *Dichopsis gutta*, and of several other trees of the natural order Sapotaceæ.

In tough, somewhat flexible pieces, of a light brown or chocolate colour.

Solubility.—Nearly soluble in Chloroform, yielding a more or less turbid solution. Entirely soluble in Oil of Turpentine, Carbon Bisulphide, and Benzol. Insoluble in Water, Alcohol, Alkaline solutions, or dilute Acids.

(Dan., Fr., Ger. (Percha Lamellata), Hung., Port., Russ., Span., Swed., and U.S.; not in the others.)

Medicinal Properties.—Used for making splints; as Gutta Percha tissue for preventing evaporation from applications; as a solution for mixing with medicaments to form plasters, or to be applied like Collodion.

Preparation.

LIQUOR GUTTA PERCHA.

Gutta percha, in thin slices, 1 oz.; Chloroform, 8 fl. oz.; Carbonate of Lead, in fine powder, 1 oz. Add the Gutta percha to 6 fluid ounces of the Chloroform in a stoppered bottle, and shake them together frequently until solution has been effected. Then add the Carbonate of Lead previously mixed with the remainder of the Chloroform, and having several times shaken the whole together, set the mixture aside, and let it remain at rest until the insoluble matter has subsided. Lastly, decant the clear liquid, and keep it in a well-stoppered bottle.

Used only in the preparation of Charta Sinapis.

(U.S.; not in the other Pharmacopœias.)

Not Official.

TRAUMATICINE.—A solution of 1 Gutta Percha tissue in 10 (by weight) of Chloroform. It produces a thin delicate film when painted on the skin, and causes neither tension nor pain. It is used for medicated applications.—*P.J.* xiv. 341.

UNNA'S PLASTER MULLS consist of a very thin sheet of Gutta Percha coated on one side with an adhesive substance (Aluminium Oleinicum) containing one or more medicinal substances, and backed on the other side with Mull (undressed muslin).—*L.* '86, ii. 575.

Not Official.

GYNOCARDIÆ OLEUM.

CHAULMUGRA OIL.

Obtained from the seeds of *Gynocardia odorata*, a native of the forests of the Malayan Peninsula and Eastern India, as far north as Assam, extending thence along the base of the Himalayas as far west as Sikkim. The oil has been long known and used in India; it is solid, of a light brown colour, with a disagreeable taste and smell, and can be readily melted by a gentle heat.

Medicinal Properties.—It has been recommended in the treatment of leprosy and other skin diseases, chronic rheumatism and gout, and secondary syphilis. Good results have been obtained from its external as well as internal administration in phthisis.—*B.M.J.* '80, ii. 844.

Dose.—2 to 15 minims; it is best to begin with a small dose, 2 to 3 minims three or four times a day, gradually increasing; should be given after meals in milk or emulsion with gum acacia.

An **ointment** can be made of a strength about 1 in 4 with Paraffin or other basis.

GYNOCARDIC ACID.—Chaulmugra Oil contains about 12 per cent. of an active principle, Gynocardic Acid, the dose of which is ½ grain in pill three times daily, gradually increasing to 2 grains.

HÆMATOXYLI LIGNUM.

LOGWOOD.

The heart-wood of *Hæmatoxylon Campechianum* sliced.

Imported from Campeachy in Central America, from Honduras and Jamaica.

The cherry-red inner wood is the part used.

(Austr., Belg., Fr. (Bois de Campêche); Port. (Campeche); Russ. and Swed. (Lignum Campechianum); not in the others.)

Medicinal Properties.—The decoction is a mild astringent, without irritating properties, useful in atonic dyspepsia and ordinary chronic diarrhœa and dysentery, and in passive hæmorrhages; also as an injection for leucorrhœa.

Incompatibles.—Mineral Acids, Metallic Salts, Lime Water, Tartar Emetic.

Preparations.

DECOCTUM HÆMATOXYLI.

Logwood, in chips, 1 oz.; Cinnamon, bruised, 55 grs.; Distilled Water, 20 oz.: boil the logwood in the water for ten minutes, adding the cinnamon towards the end, strain, and pour on the contents of the strainer sufficient Distilled Water to make 20 oz. =(1 in 20).

Cinnamon reduced from 60 to 55 grains.

Iron vessels should not be used.

Dose.—1 to 2 oz.

(Not in the others.)

EXTRACTUM HÆMATOXYLI.

Logwood, in fine chips, 1; boiling Distilled Water, 10: infuse twenty-four hours, boil to 5, strain, and evaporate to dryness by a water bath, stirring with a wooden spatula. Iron vessels should not be used.

Dose.—10 to 30 grs.

(Same as Belg. Russ. and U.S.; not in the others.)

Not Official.

EXTRACTUM HÆMATOXYLI LIQUIDUM.—*Unfermented* Logwood, in coarse powder, 10, exhaust with boiling water acidulated with Hydrochloric Acid and evaporate the strained liquor to 10, allow it to settle for a week, then draw off the clear extract from the sediment.

The product has a fine red colour and sp. g. 1·06.—*P.J.* xviii. 285.

Dose.—30 to 60 minims.

HÆMATOXYLIN $C_{16}H_{14}O_6$.—Sparingly soluble in cold water, readily in alcohol and ether. It has a sweet taste, without astringency. Used for staining histological specimens.

Not Official.

HAMAMELIS.

WITCH HAZEL.

The bark and leaves of *Hamamelis Virginica.*

(U.S.; not in the others.)

Medicinal Properties.—A powerful astringent and hæmostatic. It is valuable in various forms of passive hæmorrhage, epistaxis, hæmoptysis, hæmatemesis, menorrhagia and piles, also for varicose veins.

Preparations.

EXTRACTUM HAMAMELIDIS.—Hamamelis Bark, percolated with Proof Spirit and the percolate evaporated to the consistence of an extract.

Dose.—½ to 2 grains in **pill**; 1½ grains in **suppositories**; 1 drm. in 7 drms. of vaseline or other diluent for an **ointment.**

EXTRACTUM HAMAMELIDIS LIQUIDUM (*B.P.C.*).—Hamamelis leaves in No. 40 powder, 20 ozs.; percolate with a mixture of Rectified Spirit 1, Distilled Water, 2: reserve the first 17 ounces of the percolate and evaporate the remainder to a soft extract, dissolve the latter in the reserved percolate and add sufficient menstruum to measure 20 ozs.

Dose.—2 to 5 minims in water.

(U.S.; not in the other Pharmacopœias.)

TINCTURA HAMAMELIDIS.—Hamamelis Bark, in No. 20 powder, 2; percolate with Proof Spirit to make 20.

This old Companion formula (1877) has now been adopted by the B.P.C.

Dose.—5 to 60 minims in water.

Not Official.

HELLEBORUS.

CHRISTMAS ROSE.

The rhizome and rootlets of *Helleborus niger.*

(Belg. Fr. Port. and Span.; not in the others.)

Medicinal Properties.—A hydragogue cathartic and emmenagogue. Poisonous in large doses.

Preparation.

TINCTURA HELLEBORI.—Hellebore Root, 1; percolated with Proof Spirit to obtain 8.

Dose.—20 to 60 minims in water.

(Port. 1 in 5; not in the other Pharmacopœias.)

HEMIDESMI RADIX.

HEMIDESMUS ROOT.

The root of *Hemidesmus Indicus* (Indian Sarsaparilla), dried.
Imported from India.

(Not in the other Pharmacopœias.)

Medicinal Properties.—Diuretic. Useful as an alterative in some diseases of the kidneys.

It was brought to England by Dr. Ashburner about the year 1830, and was prescribed for skin diseases and indigestion, like Sarsaparilla, but it did not prove very satisfactory, and is now used chiefly as a flavouring agent.

Preparation.

SYRUPUS HEMIDESMI.

Hemidesmus Root, bruised, 1; Refined Sugar, 7; boiling Distilled

Water, 5: infuse the root in the Water for four hours, and strain; set it by till the sediment subsides, decant the clear liquor, add the Sugar, and dissolve by a gentle heat. The product should weigh 10½ and measure 8. Sp. g. about 1·335. =(1 in 8).

Dose.—1 to 2 drms.

(Not in the other Pharmacopœias.)

HIRUDO.

THE LEECH.

Sanguisuga medicinalis, the Speckled Leech (English Leech), belly greenish-yellow, spotted with black.

S. officinalis, the Green Leech, belly olive-green, not spotted; imported chiefly from Hamburg. Also collected in large numbers in Spain, France, Italy, and Hungary.

Used for the abstraction of blood from congested parts.

Bleeding from leech bites is sometimes difficult to stop. The following remedies have been applied with advantage:—Matico Leaf, Solution of Perchloride of Iron, Nitrate of Silver Point, saturated Solution of Alum, and pressure on the part.

(Austr., Belg., Dan., Dutch, Fr. (Sangsue Medicinale), Ger., Hung., Port. (Sanguesugas), Russ., Span. (Sanguijuela), Swed. Not in the others.)

HORDEUM DECORTICATUM.

PEARL BARLEY.

The dried seed of *Hordeum distichon*, divested of its integuments: from plants cultivated in Britain.

(Belg., Fr. (Orge Perlé), Port. (Cevada Santa), Span. (Cebada); not in the others.)

Preparation.

DECOCTUM HORDEI.

Pearl Barley, 1; wash the Barley with cold water, then add to the washed barley Distilled Water, 15; boil twenty minutes in a covered vessel and strain. Product about 10. =(about 1 in 10).

(Dutch, 8 in 100; Fr., Tisane d'Orge, 1 in 50; not in the other Pharmacopœias.)

Medicinal Properties.—Demulcent, used as a drink in the sick-room.

Dose.—1 to 4 oz.

HYDRARGYRUM.

MERCURY.

Hg, eq. 200.

A brilliantly lustrous silver-white metallic liquid, becoming solid at —39° F. (—39·4° C.) Sp. g. 13·5. Boils at 360° C., but volatilises slightly even at the ordinary temperature.

From China, Almaden in Spain, and Idria in Carniola; also from Peru and California. It is chiefly obtained from its Sulphuret (native Cinnabar) by distillation; but it is sometimes found in globules disseminated through the ore.

Mercury, as imported, is, after being squeezed through leather, nearly free from impurities. It was first employed medicinally by the Arabian physicians Avicenna and Rhazes, but they only ventured to use it externally against vermin and cutaneous diseases. We are indebted to that renowned empiric Paracelsus for its administration internally. *Pereira, Mat. Med.* 1849.

Test.—Entirely volatilized at a temperature below that of visible redness, leaving no residue.

(In all the Pharmacopœias.)

Medicinal Properties.—Mercury as a metal is seldom given alone. In a state of minute sub-division with Chalk, however, it has the effect of increasing the various secretions, its influence upon the salivary glands being the ordinary index of the extent of its action. It is alterative, cholagogue, and purgative. It causes the absorption and prevents the formation of morbid effusions, and is itself absorbed in all the tissues of the body.

It is used in congestion of the liver, and in acute and chronic inflammation.

Of great use in syphilis, but the doses should not be such as to cause salivation.

Externally, as a topical stimulant to indurated and chronically inflamed parts, and sometimes for introducing the metal into the system.

Preparations.

EMPLASTRUM HYDRARGYRI.

Mercury, 3 oz. (by weight); Olive Oil, 56 grs. (by weight); Sublimed Sulphur, 8 grs.; Lead Plaster, 6 oz.: heat the oil, add the sulphur to it gradually, stirring till they unite; add the mercury, and triturate till its globules disappear; then add to the mixture the lead plaster, previously liquefied, and mix the whole thoroughly.

=(about 1 in 3).

(Austr., 1 in 5; Belg., 1 in 5·25; Dan., Ger., Hung., Port., Russ., Swed., and Swiss, 1 in 5; Dutch, 1 in 4; Fr., 1 in 5·6; Span., 1 in 7·5; U.S., 3 in 10: the ingredients differ considerably. Not in Norw.)

EMPLASTRUM AMMONIACI CUM HYDRARGYRO.

Ammoniacum, 12 oz.; Mercury, 3 oz. (by weight); Olive Oil, 56 grs. (by weight); Sublimed Sulphur, 8 grs.: heat the oil, and add the sulphur to it gradually, stirring till they unite. With this mixture triturate the mercury until globules are no longer visible; and lastly, add the ammoniacum, previously liquefied by heat, mixing the whole carefully.

=(nearly 1 in 5).

Applied as a discutient to glandular swellings, syphilitic nodes, and in chronic synovitis.

(U.S. resembles Brit.; not in the other Pharmacopœias.)

LINIMENTUM HYDRARGYRI.

Ointment of Mercury, 1; Solution of Ammonia, 1; Liniment of Camphor, 1: mix the Solution of Ammonia with half of the Liniment of Camphor, rub the Mercurial Ointment with the other half, then mix them together. =(1 Ointment in 3, or 1 of Mercury in 6).

(Not in the other Pharmacopœias.)

A stimulating Liniment, applied to indolent ulcers; placed with lint in the armpits, it is a sure mode of producing salivation.

PILULA HYDRARGYRI.

Mercury, 2 (by weight); Confection of Roses, 3; Liquorice Root in fine powder, 1: rub the mercury with the confection of roses until metallic globules are no longer visible, then add the liquorice, and mix the whole well together. =(1 in 3).

8 commercial samples examined contained 28 to 41 p. c. of Mercury, and little or no Oxide; 5 of the 8 samples were prepared with Confection of Hips.—*P.J.* xv. 230.

Dose.—3 to 8 grs. as an alterative, 10 grs. as a purgative.

(Belg., Pilulæ Hydrargyricæ; Fr., Pilules Mercurielles Simples; Port., Pilulas Mercurials; Swed., Pilulæ Hydrargyri; Swiss, Pilulæ Mercuriales Cœruloæ; U.S. Massa Hydrargyri, all 1 in 3; not in the others.)

SUPPOSITORIA HYDRARGYRI.

Ointment of Mercury, 60 grs.; Oil of Theobroma, 120 grs.: melt the oil, add the ointment of mercury, and stir till well mixed, and without applying more heat immediately pour into moulds, the capacity of 15 grs. each, dividing the mass into 12 equal parts.

Benzoated Lard and White Wax now omitted.

Each suppository contains 5 grs. of Mercurial Ointment.

UNGUENTUM HYDRARGYRI.

Mercury, 16 (by weight); Prepared Lard, 16; Prepared Suet, 1: rub them together until metallic globules cease to be visible. =(nearly 1 in 2).

8 commercial samples examined contained 38 to 46 p. c. of Mercury; 4 of them contained small proportions of Oleate.—*P.J.* xv. 230.

(Belg., Fr., Port., and U.S., 1 in 2: Fr. has also Pommade Mercurielle Faible, 1 in 4; Span., Pomada Mercurial Doble, 1 in 2; P. M. Terciada, 1 in 3; P. M. Simple, 1 in 6; Austr., Ger., Hung., and Russ. (Ung. Hydr. Ciner.), 1 in 3; Swiss (Ung. Hyd. Ciner.), 3 in 10; Dutch, 1 in 4; Dan., Norw., and Swed., 1 in 5.)

UNGUENTUM HYDRARGYRI COMPOSITUM.

Ointment of Mercury, 6; Yellow Wax, 3; Olive Oil, 3 (by weight); Camphor, 1½: melt the wax and the oil, then incorporate the ointment of mercury, and when the mixture is nearly cold, add the camphor in powder and stir the whole thoroughly together. =(1 Mercury in 4½).

This is Scott's celebrated absorbent Ointment, the Soap Cerate being replaced by the Oil and Wax.

It is an admirable Ointment to apply to carbuncles and other indolent tumours.

Not Official.

MERCURY PLASTER MULL (UNNA).—Containing 1 grain of Mercury to the square inch.

MERCURY AND CARBOLIC PLASTER MULL (UNNA).—Containing 1 grain of Mercury and ⅜ grain Carbolic Acid to the square inch.

OLEUM CINEREUM. "Grey Oil."—White Vaseline, 2·5; Mercurial Ointment (Codex), 1; Mercury, 19·5; triturate in a warm mortar until the Mercury is extinguished; then add Solid White Vaseline, 7; Liquid Vaseline, 20.

This preparation contains 40 p. c. Mercury.—*P.J.* xix. 704.

Medicinal Properties.—For **hypodermic injection** in syphilis. **Dose.**—1 to 2 minims.—*B.M.J.* '88, i. 1296.

Not Official.

HYDRARGYRI CYANIDUM.

Colourless crystals. Not decomposed by Alkalies.

Solubility.—1 in 13 of Water; 1 in 20 of Roctified Spirit.

(U.S.; Belg., Cyanurotum Hydrargyri; Fr., Cyanuro Mercurique; Ger. Hung. and Swiss, Hydrargyrum Cyanatum; Port., Cyaneto Mercurico; Span., Cianuro Mercurico.)

Medicinal Properties.—A powerful antiseptic. Used as a local application (5 to 15 grains in 1 oz. of Water) to syphilitic rashes and sores of the throat, tongue, &c. (Ringer).

In diphtheria the following mixture is recommonded: Cyanide of Mercury, $\frac{1}{3}$ grain; Tincture of Aconite, 35 minims; Honey, 2 oz. Mix. Give a teaspoonful every 15, 30, or 60 minutes, according to age. No brushing of the throat is practised. A **gargle**, 1 in 10,000, to be used every 15 minutes.—*L.* '88, i. 591, 1063.

Ph. Ger. maximum single dose, $\frac{1}{2}$ grain; maximum daily dose, $1\frac{1}{2}$ grains.

T. H. has a varnished Pill containing $\frac{1}{10}$ grain in each. 1 pill twice a day.

ZINCO-CYANIDE OF MERCURY.—A product of unknown composition, which has been found by Sir Joseph Lister to have valuable antiseptic properties. There is also a **gauze** prepared with it.—*B.M.J.* '89, ii. 1025; *L.* '89, ii. 943.

HYDRARGYRI IODIDUM RUBRUM.

RED IODIDE OF MERCURY.

Syn.—Biniodide of Mercury.

HgI_2, eq. 454.

A crystalline powder of a vermilion colour.

Solubility.—Almost insoluble in Water; sparingly soluble in Glycerine; 1 in 300 of Rectified Spirit; 1 in 70 of Ether; 1 in 280 of Olive or Almond Oil or Lard; 1 in 50 of Castor Oil; insoluble in Vaseline; freely in an aqueous solution of Iodide of Potassium or Perchloride of Mercury.

Tests.—It sublimes entirely at a heat below redness. When heated gently it becomes yellow, and resumes its scarlet colour on being rubbed when cold.

(U.S.; Austr., Hung., and Russ., Hydrargyrum Biiodatum Rubrum; Ger. and Swiss, Hydrargyrum Biiodatum; Belg., Deutoiodurctum Hydrargyri; Dan., Iodetum Hydrargyricum Rubrum; Dutch, Iodetum Hydrargyricum; Fr., Iodure Mercurique; Port., Iodeto Mercurico; Span., Ioduro Mercurico; Swed., Iodetum Hydrargyricum Præcipitatum.)

Medicinal Properties.—A powerful irritant poison, similar to he Green Iodide, only much more active. It is used internally in the ame cases as Corrosive Sublimate, more particularly in syphilis.

Dose.—$\frac{1}{32}$ to $\frac{1}{8}$ grain.

Best given in a solution of Iodide of Potassium.

Used in the preparation of Liquor Arsenii et Hydrargyri Iodidi.

Preparations.

UNGUENTUM HYDRARGYRI IODIDI RUBRI.

Red Iodide of Mercury in very fine powder, 16 grs.; Simple Ointment, 1 oz.: mix. =(1 in 28).

(Not in the other Pharmacopœias.)

Medicinal Properties.—A most effective application for bronchocele, and a ood application for warts and syphilitic nodes. An application for lupus.

If applied to the eyelids, should be diluted to ¼ the strength, and even then it is a rubefacient to delicate skins.

Not Official.

HYDRARGYRI ET POTASSII IODIDI.—Yellow acicular crystals.

An aqueous solution of 1 in 12,000 is a powerful antiseptic.—*T.G.* '85, 826.

Not Official.

HYDRARGYRI IODIDUM VIRIDE.

GREEN IODIDE OF MERCURY.

HgI, eq. 327.

A dull green powder, which darkens in colour upon exposure to light.

This was official in the B. P. of 1867.

Mercury, 1 oz. (by weight); Iodine, 278 grs.; Rectified Spirit, a sufficiency; rub the iodine and mercury in a porcelain mortar, occasionally moistening the mixture with a few drops of the spirit to prevent violent action, and continue the trituration until metallic globules are no longer visible, and the whole assumes a green colour; then wash the product with rectified spirit and finally dry it in a dark room, on filtering-paper, by simple exposure to the air, and preserve in an opaque bottle.

This should be freshly made, as Biniodide of Mercury forms after being kept some time, and becomes evident in minute red specks pervading the mass.

Insoluble in Water, Alcohol, and Ether.

Tests.—Entirely volatilized at a red heat. When shaken in a tube with Ether, nothing is dissolved. Is not acted upon by Aniline at a boiling heat, but if Biniodide be present, a magenta colour is produced.

(U.S.; Austr., Hung., and Swiss, Hydrargyrum Iodatum flavum; Belg., Proto Ioduretum Hydrargyri; Dan., Iodetum Hydrargyrosum flavum; Dutch and Swed., Iodetum Hydrargyrosum; Fr., Iodure Mercureux; Ger., Hydrargyrum Iodatum; Port., Iodeto Mercuroso; Russ., Hydrargyrum Iodatum Viride; Span., Ioduro Mercurioso. Not in Norw.)

Medicinal Properties.—An irritant poison, similar to calomel in action. Given in syphilis when the Red Iodide cannot be borne. In small repeated doses it acts upon the lymphatic and glandular systems, and sometimes causes salivation. Employed as an **ointment** (1 part to 8 of Lard) for scrofulous and venereal eruptions, and chronic skin diseases.

Dose.—½ to 3 grs., for children ⅙ to ½ grain.

Not Official.

PILULA HYDRARGYRI IODIDI VIRIDIS.—Green Iodide of Mercury, ½ gr.; Opium, ¼ gr.; Extract of Gentian, 2 grs.—*British Skin.*

UNGUENTUM HYDRARGYRI IODIDI VIRIDIS CUM ATROPINA.—Green Iodide of Mercury, 10 grs.; Atropine, 1 gr.; Lard, ½ oz.

This ointment is most useful in softening and reducing indurated Fascia of the hand, which causes the fingers to close upon the palm.

HYDRARGYRI NITRATIS LIQUOR ACIDUS.

ACID SOLUTION OF NITRATE OF MERCURY.

Pernitrate of Mercury, **$Hg\,2NO_3$**, eq. 324, in solution in Nitric Acid.

A colourless and strongly acid solution.

Mercury, 4 (by weight); Nitric Acid, 5; Distilled Water, 1½: mix the nitric acid with the water in a flask, and dissolve the mercury in the mixture without the application of heat. Boil gently for fifteen minutes, cool, and preserve the solution, which should weigh about 12 oz., in a stoppered bottle away from the light.

Tests.—Sp. g. about 2·0. Gives a yellow precipitate with Solution of

Potash added in excess. Does not give any precipitate when a little of it is dropped into Hydrochloric Acid, diluted with twice its volume of water.

(U.S., sp. g. 2·100; Russ., Hydrargyrum Nitricum Oxydulatum Solutum, 10 per cent. of Nitrate; Belg., Nitras Hydrargyri liquidus sp. g. 1·44—1·45; Dan., Solutio Nitratis Hydrargyrosi; Fr., Azotate Mercurique Liquido, sp. g. 2·246; Port., Soluto do Azotato Mercurico; Span., Nitrato Mercurico Acido, sp. g. 2·246; Swed., Solutio Nitratis Hydrargyri; Swiss, Liquor Hydrargyri Nitrici Oxydati, sp. g. 1·175—1·185. Not in the others.)

Medicinal Properties.—Caustic. Applied to syphilitic warts, ulcers, tubercles, &c. Used in cancerous diseases and in lupus. As a **gargle**, 1 or 2 minims to 1 oz. water. As an **injection** in gonorrhœa, 1 minim to 2 oz. water.

Preparations.

UNGUENTUM HYDRARGYRI NITRATIS. *Syn.* UNGUENTUM CITRINUM.

Mercury, 4 (by weight); Nitric Acid, 12; Prepared Lard, 15; Olive Oil, 32: dissolve the mercury in the nitric acid with the aid of a gentle heat; melt the lard in the oil by a steam or water bath in a porcelain vessel capable of holding six times the quantity, and while the mixture is at about 212° F. (100° C.) add the solution of mercury, also at about 212° F., mixing them thoroughly. If the mixture does not froth up, increase the heat till this occurs and stir till cold. (The heat required for this is 170° to 180° F.). =(about 1 in 15½).

Medicinal Properties.—Applied in chronic diseases of the skin as a stimulant and alterative; very efficacious in eczema; in ophthalmic diseases, and in tinea ciliaris, it is diluted with 1 or 2 parts of Spermaceti Ointment, and applied by means of a camel's-hair pencil to the eyelids.

We are chiefly indebted to Dr. Duncan for the improved formula which, with some modification, is adopted by the British Pharmacopœia, so that we have now an ointment that remains soft, and retains its beautiful lemon colour for a long time. This Ointment, however, on being diluted with lard, soon acquires a leaden colour; it changes less with Spermaceti Ointment, and least of all when diluted with soft Paraffin.

Belg., Mercury, 2; Nitric Acid (sp. g. 1·33), 3; Lard, 12; Olive Oil, 12.
Dan., Mercury, 1; Nitric Acid (sp. g. 1·48—1·5), 2; Lard, 3; Olive Oil, 9.
Fr., Mercury, 1; Nitric Acid (sp. g. 1·39), 2; Lard, 10; Olive Oil, 10.
Port., Sol. Mercuric Nitrate, 2; Lard, 9; Olive Oil, 9.
Span., Mercury, 2; Nitric Acid (sp. g. 1·32), 3; Lard, 16; Olive Oil, 16.
Swed., Mercury, 1; Nitric Acid (sp. g. 1·5), 2; Lard, 12.
Swiss, Mercury, 7; Nitric Acid (sp. g. 1·33), 14; Lard, 80.
U.S., Mercury, 7; Nitric Acid (sp. g. 1·42), 17; Lard Oil, 76.

UNGUENTUM HYDRARGYRI NITRATIS DILUTUM.

Nitrate of Mercury Ointment, 1; Soft Paraffin, 2: mix.

Not Official.

VASELINUM HYDRARGYRI NITRATIS.—The Author prepared some Citrine Ointment, using the same proportions of Mercury and half the Acid ordered in the Pharmacopœia, but in the place of the Lard and Olive Oil he has used White Vaseline. The Acid and Mercury are put into a flask, the Vaseline heated in a water bath to 180° F.; if the Mercury is not all dissolved it is held in the bath till it is; it is then poured into the Vaseline, and stirred together till cold. It makes a nice ointment and keeps well; it may be diluted to any extent with White Vaseline, without impairing in the least the beautiful lemon colour it possesses. Yellow Vaseline may be used to dilute it, but not to prepare it.

A less acid preparation can be made by triturating 1 of Crystallised Pernitrate of Mercury with 8 of Soft Paraffin.

Incompatibles.—All reducing agents, camphor, essential oils, lard, etc.

HYDRARGYRI OLEATUM.

OLEATE OF MERCURY.

Made by dissolving recently precipitated and well-dried Yellow Oxide of Mercury in Oleic Acid.

This preparation was introduced by Prof. Marshall in 1872, and was made of three different strengths, containing respectively 5 per cent., 10 per cent., and 20 per cent. of Oxide of Mercury.

The 5 per cent. very quickly changed to a black colour owing to reduction of the Mercuric Oxide; the 10 per cent. kept better but not very long without change. It is better to keep the 20 per cent. and dilute it when required for use.

Oleate of Mercury is also prepared by precipitation. Dissolve Yellow Oxide of Mercury, 150 grains, in a mixture of Nitric Acid, 130 grains, and Water, 2 oz.; dilute this to 40 oz. with Water. Add Solution of Oleate of Potassium, 20 oz., constantly stirring, warm gently and wash with warm water. Pour off the water, and dry at a gentle heat.

This represents 28·4 per cent. of Oxide of Mercury, which may be diluted to any strength with Oleic Acid.

(U.S. same as Brit.; not in the others.)

Medicinal Properties.—Has been strongly recommended as an application for persistent or chronic inflammation in the joints or other parts near to the skin, more particularly when combined with Morphia. It is useful, placed in the axilla, for syphilis; also as an application for non-ulcerated syphilitic indurations.

A good application for killing pediculi.

Not Official.

HYDRARGYRI OLEATUM C. MORPHIA is made by dissolving 1 grain of Morphine Alkaloid in each drachm of the Oleate of Mercury.

HYDRARGYRI OXIDUM FLAVUM.

YELLOW OXIDE OF MERCURY.

HgO, eq. 216.

Perchloride of Mercury, 4 oz.; Solution of Soda, 40 oz.; Distilled Water, a sufficiency.

Dissolve the Perchloride of Mercury in 80 ounces of Distilled Water, aiding the solution by the application of heat, and add this to the Solution of Soda. Stir them together; allow the yellow precipitate to subside; remove the supernatant liquor by decantation; thoroughly wash the precipitated Oxide on a calico filter with distilled water; and finally dry it by the heat of a water bath.

A heavy, impalpable, yellow powder, permanent in the air, but turning darker on exposure to light.

Solubility.—Practically insoluble in Water or Rectified Spirit; soluble in Nitric Acid and Hydrochloric Acid.

Tests.—The solution in Hydrochloric Acid gives, with solution of Ammonia, a white precipitate. It is entirely volatilized when heated to incipient redness, being resolved into oxygen gas and the vapour of mercury.

1 gr. to 60 grs. of spermaceti ointment is the proper strength for the eyelids.

(Austr. and Hung., Hydrargyrum oxydatum flavum; Belg., Oxydum Hydrargyri Flavum; Dutch, Oxydum Hydrargyricum Flavum; Fr., Oxyde Mercurique Jaune; Ger., Russ. and Swiss, Hydrargyrum oxydatum viâ humidâ paratum; Norw., Oxidum Hydrargyricum; Span., Oxido Mercurico Amarillo; Swed., Oxydum Hydrargyricum Præcipitatum; U.S., Hyd. Oxid. Flav.)

Not Official.

UNGUENTUM HYDRARGYRI OXIDI FLAVI (*B.S.H.*).—Yellow Oxide of Mercury, 15 grs.; Benzoated Lard, 1 oz.: mix.

Medicinal Properties.—Used in cases of chronic eczema, pityriasis, ringworm, chronic lichen, and syphilitic eruptions.

Diluted with an equal or twice the quantity of Vaseline. Used for corneal ulceration and ophthalmia tarsi.

(Dutch, Yellow Oxide 1; White Vaseline 19; Fr., Pommade Avec l'Oxyde Jaune de Mercure, Yellow Oxide, 1; Vaseline, 15; U.S., Yellow Oxide, 10; Lard, 72; Yellow Wax, 18; not in the others.)

HYDRARGYRI OXIDUM RUBRUM.

RED OXIDE OF MERCURY.

Syn. HYDRARGYRI NITRICO-OXIDUM, Lond.

HgO, eq. 216.

An orange-red powder obtained by heating Mercurous Nitrate carefully until Nitrous fumes cease to be given off.

Solubility.—Insoluble in Water and Rectified Spirit; readily soluble in Hydrochloric Acid.

Tests.—Entirely volatilized at a red heat, being at the same time decomposed into mercury and oxygen. If this be done in a test-tube, no orange vapours are perceived—indicating absence of Nitrate. The solution in Hydrochloric gives a yellow precipitate with solution of Potash in excess, and a white precipitate with solution of Ammonia.

(U.S.; Belg. Oxydum Hydrargyri Rubrum; Dan., Dutch, Norw. and Swed., Oxydum Hydrargyricum; Fr., Oxide Mercurique Rouge; Ger. and Swiss, Hydrargyrum Oxydatum; Port., Oxydo Mercurico; Russ., Hydrargyrum Oxydatum Rubrum; Span., Oxido Mercurico Rojo. Not in Austr. or Hung.)

Medicinal Properties.—A powerful irritant. Not used internally. Employed, either in powder or ointment, as an escharotic to indolent ulcers.

Preparation.

UNGUENTUM HYDRARGYRI OXIDI RUBRI.

Red Oxide of Mercury in very fine powder, 62 grs.; Hard Paraffin, ¼ oz.; Soft Paraffin, ¾ oz.; melt the Hard and Soft Paraffins together, and when the mixture in cooling begins to thicken add the Oxide of Mercury in a glass or porcelain mortar and mix the whole thoroughly. =(1 in 8).

Much diluted, was used for ulcerations of the cornea, but the Ointment of Precipitated Oxide is preferred.

Red oxide with both lard and simple cerate soon gets blue by keeping; with spermaceti ointment, however, it keeps its colour for months.

This ointment was formerly made with Yellow Wax and Oil of Almonds, but in B. P. 1885 these are replaced with the Hard and Soft Paraffins.

(Belg., 1 in 50; Dan., Dutch, Norw., Port. and Swiss, 1 in 20; Fr. and Span., 1 in 16; Ger. and U.S., 1 in 10; Russ., with precipitated oxide, 1 in 50. Not in Austr., Hung. or Swed.)

HYDRARGYRI PERCHLORIDUM.

PERCHLORIDE OF MERCURY.

$HgCl_2$, eq. 271.

Syn. HYDRARGYRUM CORROSIVUM SUBLIMATUM, Brit. 1864; HYDRARGYRI BICHLORIDUM, Lond.; SUBLIMATUS CORROSIVUS, Edin.; SUBLIMATUM CORROSIVUM, Dub.; CORROSIVE SUBLIMATE.

In heavy colourless masses of prismatic crystals.

Solubility.—1 in 19 of Water; 1 in 5 of Rectified Spirit; 1 in 3 of Absolute Alcohol; 1 in 6 of Ether, B. P. (·735); 1 in 11 of Ether Purus (·720); 2 in 3 of Glycerine.

Tests.—Entirely soluble in Ether. When heated, it sublimes without decomposition, or leaving any residue. Its aqueous solution gives a yellow precipitate with Caustic Potash, a white precipitate with Ammonia, and a curdy white precipitate with Nitrate of Silver; also, when boiled with copper foil, it gives a grey deposit, which assumes a silvery lustre on being rubbed.

(Austr., Hung., Russ. and Swiss, Hydrarg. Bichloratum Corros.; Belg., Sublimatus Corrosivus; Dan., Norw. and Swed., Chloretum Hydr. Corros.; Dutch, Chloretum Hydrargyricum; Fr., Chlorure Mercurique; Ger., Hydrarg. Bichloratum; Port., Chloreto Mercurico; Span., Cloruro Mercurico; U.S., Hydrarg. Chloridum Corros.)

Medicinal Properties.—A powerful irritant, given in very small doses in syphilitic affections. Externally as a **lotion**, 1 grain to the ounce, or **ointment**, 2 to 8 grains in the ounce, in chronic skin diseases, as an **injection**, 1 grain to 8 ounces, for chronic mucous discharges, and as a **gargle**, 1 grain in 4 ounces, for ulcerated sore throat; as a **collyrium**, 1 grain in 8 ounces. For hypodermic injection, $\frac{1}{30}$ to $\frac{1}{10}$ grain (with Chloride of Sodium), in divided portions in the course of the day.

An aqueous solution 1 in 10,000 is a reliable agent for the destruction of micrococci and bacilli in active growth not containing spores; and 1 in 1,000 destroys the spores if allowed sufficient time, and can be used for washing floors, bedding, clothing, instruments, superficial wounds, and mucous surfaces. For continual application to wounds 1 in 10,000; 1 in 500 with the same percentage of Permanganate of Potassium can be used for pouring on fæcal discharges, and should be left in contact for two hours.—*L.* '85, i. 721.

Dr. Hulbert of St. Louis, stated that he had salivated five patients with a solution 1 in 3,000 given as a vaginal douche twice a day.—*L.* '85, i. 677.

Recommended for dysentery in India, $\frac{1}{175}$ gr. every 4 hours.—*L.* '89, ii. 901.

Is a powerful hepatic, but a feeble intestinal stimulant.

When Calomel and Perchloride of Mercury are given together, both the liver and intestinal glands are stimulated.—Dr. Rutherford.

Dose.—$\frac{1}{16}$ to $\frac{1}{8}$ gr.

Incompatibles.—Alkalies and their Carbonates, Lime Water, Tartar Emetic, Nitrate of Silver, Acetate of Lead, Albumen, Iodide of Potassium, Soaps, Decoction of Bark, Tannin, alkaline Sulphurets.

Antidotes.—In case of poisoning by Corrosive Sublimate, if vomiting does not already exist, it must be excited by the use of emetics; both the yolk and white of egg mixed with water may be administered in large quantity; wheaten flour with milk has also been recommended.

Preparations.

LIQUOR HYDRARGYRI PERCHLORIDI.

Perchloride of Mercury, 10 grs.; Chloride of Ammonium, 10 grs.; Distilled Water, 20 oz.: dissolve. =(1 in 875).

Each fluid drachm contains $\frac{1}{16}$ grain.

Dose.—30 to 120 minims.

(Belg., Liquor Sublimati Corrosivi (Van Swieten); **Fr.**, Soluté de Bichlorure de Mercure; Port., Soluto de Chloreto Mercurico; Swiss, Liquor Mercurialis Van Swieten, 1 in 1000; Span., Solucion Hidro-Alcoholica de Cloruro Mercurico, 1 in 1200. Not in the others.)

LOTIO HYDRARGYRI FLAVA.

Perchloride of Mercury, 18 grs.; Solution of Lime, 10 oz.: mix. =(1 in 243).

This lotion owes its efficacy to the precipitated Mercuric Oxide.

(Aq. Phagedænica.—Belg., Dan., and Dutch, 1 in 250; Fr. (Eau Phagédénique), Russ., and Swiss (Aqua Phagedænica Flava), 1 in 300; Span., Agua Fagedenica, 1 in 350. Not in the others.)

Not Official.

SUBLIMATE WOOD WOOL.—Pinewood reduced almost to a state of powder containing $\frac{1}{2}$ per cent. of Corrosive Sublimate. It is highly absorbent.

SAL ALEMBROTH.—The Double Chloride of Mercury and Ammonium, $2NH_4Cl.HgCl_2,H_2O$; when exposed to dry air the water is given off.

Solubility.—2 in 1 of Water, 1 in $3\frac{1}{2}$ of Rectified Spirit, 1 in 1 of Glycerine.

Medicinal Properties.—A powerful antiseptic, but it is not so irritating as Corrosive Sublimate. Used in the antiseptic treatment of wounds.

For **hypodermic** injection in syphilis, $\frac{1}{3}$ grain dissolved in 10 minims of Water.—*B.M.J.* '88, i. 905.

Alembroth **Gauze**, 1 per cent.; **Wool**, 2 per cent.

HYDRARGYRUM CARBOLICUM (Schadek).—Colourless crystals, or a white powder. Obtained by precipitating an alcoholic solution of Mercuric Chloride with an alcoholic solution of Phenol and Caustic Potash, and evaporating nearly to dryness, with subsequent washings.

Nearly insoluble in Water, and soluble with difficulty in cold Alcohol.

Medicinal Properties.—Recommended in secondary syphilis.—*L.* '87, i. 943; *L.* '87, ii. 277; *P.J.* xviii. 605.

Dose.—$\frac{1}{3}$ to $\frac{1}{2}$ grain three times a day in **pill**; also **hypodermically** suspended in mucilage, strength 2 per cent.

PILULA HYDRARGYRI CARBOLICI.—Carbolate of Mercury, $\frac{1}{3}$ gr.; Extract of Liquorice, 1 gr.; Powdered Liquorice, 1 gr., in each pill.
Dose.—Two to four pills daily.

HYDRARGYRI PERSULPHAS.

PERSULPHATE OF MERCURY.

$HgSO_4$, eq. 296.

A white, heavy, crystalline powder, which is decomposed by water, forming a yellow oxysulphate called Turpeth Mineral, $HgSO_4.2HgO$, and an acid sulphate in solution, $HgSO_4.2SO_3$.

It is used for working small medical batteries.

Entirely volatilized by heat, but not below redness.

(Fr., Sulfate Mercurique; Sulfato Mercurico, Port. and Span.; not in the others. Belg., Subsulphas Hydrargyri; U.S., Hydrargyri Subsulphas Flavus.)

Used to prepare Subchloride and Perchloride of Mercury.

Not Official.

UNGUENTUM HYDRARGYRI SULPHATIS FLAVÆ (*B.S.H.*).—Yellow Sulphate of Mercury, 15 grains; Benzoated Lard, 1 oz. Mix.

Useful in ringworm and seborrhœa capitis.

HYDRARGYRI SUBCHLORIDUM.

SUBCHLORIDE OF MERCURY.

Syn. Calomelas, 1864, Edin. Dub.; Hydrargyri Chloridum, Lond.; Calomel.

HgCl, eq. 235·5.

A dull white, heavy, and nearly tasteless powder. It is, however, liable to become fawn-coloured by the action of light, unless it has been sublimed into steam.

Insoluble in Water, Rectified Spirit, or Ether.

Tests.—Digested with Solution of Potash, or Solution of Ammonia, it becomes black. Entirely volatilized by a sufficient heat—indicating absence of fixed impurities. Warm Ether, which has been shaken with it in a bottle, leaves on evaporation no residue—indicating absence of Corrosive Sublimate.

This evaporation must be performed at a low temperature, otherwise the Corrosive Sublimate (if present) will volatilise in the Ether vapour.

(Belg., Calomelas; Fr., Protochlorure de Mercure par volatilisation, also Chlorure Mercureux Precipité; Chloretum Hydrargyrosum, Dan. (Precipitatum et Sublimatum), Dutch; Norw. (Mite); Swed. (Precipitatum). Austr., Hung., Russ. and Swiss, Hydrargyrum Chloratum Mite, both the levigated and that sublimed in steam; Ger., Hydrargyrum Chloratum, also Hydrargyrum Chloratum vapore paratum; Port., Chloreto Mercuroso, also Mercurio Doce; Span., Cloruro Mercurioso (Sublimado, Por el Vapor, and Precipitado); U.S., Hydrargyri Chloridum Mite.)

The following synonyms are applied to Calomel obtained by precipitation:—Fr., Précipité Blanc; Port. and Span., Precipitatum Album. These terms do not mean, as in England, Ammoniated Mercury.

Medicinal Properties.—Alterative, *cholagogue? purgative, and antiphlogistic.

Calomel stimulates the intestinal glands, but not the liver.—Dr. Rutherford.

The author is informed, however, by good observers who are in large practice that Calomel does unload the liver, affords relief in biliary affections, and causes light-coloured motions to become a healthy brown colour.

As an alterative it is used in syphilitic affections, chronic skin diseases, and scrofula in adults.

Useful in chronic hepatitis and jaundice.

As a purgative in bilious headache, hepatic dropsy, melæna, inflammation of the brain, and apoplexy.

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* The Edinburgh Committee of the British Medical Association determined that neither Mercury, nor Podophyllin, nor Taraxacum, in whatever manner, dose, or form it may be administered, has the slightest influence in increasing the flow of bile from the liver; therefore not cholagogue.

As an antiphlogistic, 2 grs. combined with ¼ gr. opium, every four hours in inflammation of the serous membranes—*e.g.*, pleurisy; also in iritis.

For children, the absence of taste renders it convenient.

Its *local uses* are numerous, as in snuff, or as a gargle in venereal sore throat, as an injection with or without lime water, in blenorrhœa, and in fumigation; for this latter purpose a spirit lamp under a metal cup containing Calomel, is placed under a cane-seated chair on which the patient is seated, his body being covered with a blanket; an apparatus contrived by Mr. Lee is still better. In a wide range of skin affections, it is invaluable as an ointment.

Should not be applied to the eye when a patient is taking Iodide of Potassium, for it will cause severe inflammation.—*M.P.* '80, ii. 294.

Dose.—As an alterative, ½ to 1 gr. three times a day; as a purgative, 2 to 8 grs.

The best form for making Calomel into pills is as follows:—2 of Calomel, 1 of soft Manna, 1 of compound Tragacanth powder. When made with mucilage they get very hard by keeping, and if made with conserve are apt to become moist.

Incompatibles.—Iodide of Potassium, Nitro-Hydrochloric Acid, Hydrocyanic Acid, Alkaline Chlorides. Soap even when neutral. Solutions of Lime, Potash, or Soda.

Preparations.

LOTIO HYDRARGYRI NIGRA.

Subchloride of Mercury, 3 grs.; Solution of Lime, 1 oz.: mix. =(about 1 in 146).

Useful application to syphilitic sores.

(Dan. Aq. Mercurialis Nigra, 1 in 250; Russ. and Swiss, Aq. Phagedænica Nigra, 1 and 60. Not in the others.)

PILULA HYDRARGYRI SUBCHLORIDI COMPOSITA. Plummer's Pill.

Subchloride of Mercury, 1; Sulphurated Antimony, 1; Guaiacum Resin in powder, 2; Castor Oil, 1, or sufficient to form a pill mass: mix. =(1 in 5).

Dose.—5 to 10 grs. as an alterative.

(Belg. Pil. Plummeri, 1 in 3; Swiss, Pil. Alterantes Plumeri, 1 in 6; U.S., Pil. Antimonii Comp., 1 in 4. Not in the others.)

UNGUENTUM HYDRARGYRI SUBCHLORIDI.

Subchloride of Mercury, 80 grains; Benzoated Lard, 1 oz.: mix. =(about 1 in 6½).

Useful in the itching of some skin affections, psoriasis and eczema, also in pruritus ani. A good application to scrofulous sores.

(Fr., Pommade de Chlorure Mercureux, 1 in 10; Port., Pomada de Mercurio Doce, 1 in 10; Span., Pomada de Cloruro Mercurioso, 2 in 17. Not in the other Pharmacopœias.)

Not Official.

PILULA CALOMELANOS C. COLOC.—Calomel, 1 gr.; Comp. Extract Colocynth, 3½ grs.; Ipecacuanha, ½ gr.; in two pills.—*Middlesex Hospital.*

PILULA CALOMELANOS C. JALAPA.—Calomel, 1 gr.; Jalap, 3 grs.; Treacle, *q.s.*: in one pill.—*St. Bartholomew's Hospital.*

PILULA CALOMELANOS C. SCAMMONIO.—Calomel, 1 gr.; Scammony, 3 grs.; Treacle *q.s.*; in one pill.—*St. Bartholomew's Hospital.*

Not Official.

HYDRARGYRI TANNAS.

A greyish-green or blackish-grey powder, containing 40 to 50 per cent. of Mercury. It is decomposed by Water and solutions of the Alkalies. It is not materially affected by Diluted Hydrochloric Acid.

(Austr. contains about 42 p. c. of Mercury; not in the others.)

Medicinal Properties.—Has been found very useful in syphilis.

It is decomposed by the Alkali of the intestines, and the Mercury rapidly passes into the system.—*L.* '84, i. 723, *M.T.* '85, ii. 869.

Dose.—1 to 2 grains in a *pill*, 3 times a day, an hour before meals.

HYDRARGYRUM AMMONIATUM.

AMMONIATED MERCURY.

Syn. White Precipitate of Mercury.

NH_2HgCl, eq. 251·5.

An opaque white powder prepared by precipitating a solution of Corrosive Sublimate with Ammonia; it is known as *infusible white precipitate.*

The *fusible* variety is obtained by adding a solution of Mercuric Chloride to a mixture of Ammonium Chloride and Ammonia till the precipitate ceases to redissolve. It has the formula $HgCl_2.2NH_3$.

Solubility.—Soluble in Hydrochloric Acid. Insoluble in Water, Alcohol, and Ether.

Tests.—Entirely volatilized at a heat below redness. Digested with Caustic Potash, it evolves Ammonia, acquiring a pale yellow colour, and the fluid, filtered and acidulated with Nitric Acid, gives a white precipitate with Nitrate of Silver. It should yield 77·5 per cent. of Metallic Mercury.

(Austr. and Hung., Hydrarg. Bichloratum Ammoniatum; Belg., Præcipitatum Album; Dan. Chloretum Amido-hydrargyricum; Dutch, Chloretum Hydrargyrico-ammonicum; Ger. and Swiss, Hydrargyrum Præcipitatum Album; Norw. and Swed., Chloreto-amidetum Hydrargyricum; Russ., Hydrarg. Amidato-bichloratum; U.S., Hydrarg. Ammoniatum; Ph. Lond. 1788, Calx Hydrargyri Alba; not in Fr.)

The synonyms, Fr., Précipité Blanc; Port. and Span., Precipitatum Album; apply to Calomel and *not* to Hydrargyrum Ammoniatum.

Medicinal Properties.—Never given internally. Used in the form of ointment as a stimulating application for chronic skin diseases, impetigo, herpes, and sometimes scabies. The ointment is used for pediculi, but the powder can be used alone or mixed with rose water, and the unpleasantness of greasing the linen avoided.

Antidotes.—Stomach-pump or an emetic; unboiled white of egg mixed with Water, Flour and Water, Barley Water. Stimulants: Brandy, Chloric Ether, Spirit of Sal Volatile.

Preparation.

UNGUENTUM HYDRARGYRI AMMONIATI.

Ammoniated Mercury, 1; Simple Ointment, 9: mix. =(1 in 10).

The strength of this is now reduced from 1 in 8 to 1 in 10.

(U.S., 1 in 10; Ger. and Swiss, Ung. Hydrargyri Album, and Russ. Ung. Hydrargyri Amidato-bichlorati, 1 in 10; Dutch, Ung. Chloreti Hydrargyrico-ammonici, 1 in 10; not in the others.)

HYDRARGYRUM CUM CRETA.

MERCURY WITH CHALK.

Syn. Grey Powder.

Mercury (by weight), 1 ; Prepared Chalk, 2 :* triturate till the globules disappear. =(1 in 3).

A powder of a light-grey colour. Free from grittiness.

12 commercial samples examined contained Mercury 21·2 to 35·8 p.c. (and one sample, taken from the bottom of a stock bottle, gave as much as 49·6 p.c., probably owing to the Mercury having shaken down) ; Mercurous Oxide from a trace to 6 p.c. ; Mercuric Oxide from ·65 to 4·6 p.c. The best sample gave 30·3, ·17, and ·65 p.c. respectively.—*P.J.* xv. 230.

Insoluble in Water.

Test.—When treated with diluted Hydrochloric Acid, part is dissolved, leaving the Mercury in a finely divided state ; the solution is not precipitated with Stannous Chloride (Mercuric Oxide).

(Swed., same as Brit. ; U.S., 3·8 in 10 ; Port., Mercurio com Carbonato de Cal, 3 in 10 ; not in the others.)

Medicinal Properties.—Chiefly given to children in diarrhœa and vomiting, also in tonsilitis and mumps.

Best given by itself, or with rhubarb or other powder, as when rubbed with hard extract to form a pill, the Mercury sometimes separates in globules.

Dose.—3 to 8 grs.

Incompatibles.—Acids and Acidulous Salts.

Not Official.

HYDRASTIS.

GOLDEN SEAL.

The rhizome and rootlets of *Hydrastis Canadensis.*

Hydrastis contains at least two alkaloids, Berberine and Hydrastine.

(Austr., Dutch and U.S. ; not in the other Pharmacopœias.)

Medicinal Properties.—Tonic, astringent, stomachic, and cholagogue.

Recommended in uterine hæmorrhage.—*L.* '85, ii. 733 ; '87, i. 391 ; '87, ii. 1287 : *B.M.J.* '87, ii. 1349 : *L.* '88, i. 868 ; '88, ii. 133 ; *B.M.J.* '88, ii. 123.

In dyspepsia.—*L.* '85, ii. 885.

Preparations.

EXTRACTUM HYDRASTIS LIQUIDUM (*B.P.C.*). Prepared with Rectified Spirit and Distilled Water equal parts, so that 1 fl. oz. equals 1 oz. of Hydrastis.

Dose.—5 to 30 minims.

(Same as Dutch and U.S. ; Austr., 2 in 3 ; not in the other Pharmacopœias.)

Dr. Shoemaker has used the fluid extract as a stimulant and astringent application in skin diseases.—*L.* '85, ii. 87.

TINCTURA HYDRASTIS (*B.P.C.*). Hydrastis, in No. 60 powder, 2 ; Proof Spirit sufficient to percolate, 20.

Dose.—20 to 60 minims.

(U.S., 1 in 5 ; not in the other Pharmacopœias.)

HYDRASTIN.—An eclectic remedy, which is said to be identical with Muriate of Berberine, has been sold under this name for many years.

It is a moderately powerful stimulant of the liver and a feeble stimulant of the intestines.—*Dr. Rutherford.*

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* Instead of the 2 of Chalk, 1½, with ½ of Sugar of Milk, is recommended in the *Ph. Journal*, March, 1860, and again June 24, 1876.

HYDRASTINA.—An alkaloid, crystallising in white prisms. Taste bitter and pungent. Melts a little above 100° C. Nearly insoluble in Water, but freely soluble in Alcohol, Ether, Chloroform, and Benzene, which last three solvents do not dissolve Berberine.

HYDRASTINÆ HYDROCHLORAS.—Hydrochlorate of Hydrastine (not Berberine)—Colourless crystals.

Solubility.—Readily in Water and in Rectified Spirit (about 1 in 1 of either).

NOTES.—*P.J.* xv. 297; xvii. 427.

Has been used as an ecbolic in pregnancy.—*L.* '86, i. 990.

As a vesical injection.—*L.* '87, ii. 605.

In chronic pharyngitis.—*L.* '89, i. 549.

Not Official.

HYDROGENII PEROXIDUM.

H_2O_2.

In its purest condition this is a colourless liquid. Sp. g. 1·452, evolving when heated 475 times its volume of oxygen gas. It is obtained by decomposing Peroxide of Barium with Sulphuric Acid, and concentrating the filtered liquid in vacuo over Sulphuric Acid. Commercially it is sold containing 10 or 20 volumes of available oxygen, at which strength it is permanent at ordinary temperatures. It is one of the most powerful oxidising agents known, and is used for bleaching hair and delicate fabrics which might be injured by Chlorine.

Dr. Richardson has recommended its use in 5 volume solution as a deodorising **gargle** in scarlet fever, and the following **mixture** in whooping-cough:—Hydrogen Peroxide (10 vols.), 6 drms.; Glycerine, 4 drms.; Water to 3 ozs. Dose: Half a fluid ounce in a wineglassful of Water 5 or 6 times a day.—*Asclepiad* '87, 53.

HYOSCYAMI FOLIA.

HENBANE LEAVES.

The fresh leaves and flowers, with the branches to which they are attached, of the indigenous biennial plant *Hyoscyamus niger*, Henbane; collected from wild or cultivated plants growing in Britain when about two-thirds of the flowers are expanded. Also the leaves and flowering tops, carefully dried.

Its properties are completely extracted by Alcohol. The leaves yield by destructive distillation a very poisonous oil. From the plant are obtained a crystallizable alkaloid Hyoscyamine, also Hyoscine, which until lately has been regarded as uncrystallizable.

The biennial plant in the first year presents only a tuft of leaves; these die, and leave not a trace of the plant above ground in the winter; they spring again in April, and produce a stem; the leaves and the branches of this are used in medicine.

(Austr., Dutch, Ger., Hung., Swed., and U.S., Leaves; Belg., Dan.; Fr., Jusquiame noire; Norw.; Port., Meimendro; Russ.; Span., Beleno; and Swiss, Leaves and Seeds.)

Medicinal Properties.—Narcotic. Similar in action to Belladonna and Stramonium, but milder. Used as a sedative in excited states of the nervous system when Opium, from its constipating properties, is not advisable. It is also employed to diminish pain and allay irritation of the bladder, and to prevent the griping of purgative medicines. The juice is sometimes used as a cataplasm, or as a fomentation to allay pain in ulcers and tumours, and in gouty and rheumatic swellings. It dilates the pupil of the eye.

Incompatibles.—Vegetable Acids, Nitrate of Silver, Acetate of Lead, Liquor Potassæ or Sodæ.

Antidotes.—The same as for Atropine.

According to the statement of some eminent writers, a large dose of Hyoscyamus may be taken with impunity.

Preparations.

EXTRACTUM HYOSCYAMI.

The expressed juice of the leaves and young branches of the fresh plant treated as directed in Extract of Belladonna, and evaporated to an extract at a temperature not exceeding 140° F. (60° C.).

100 lbs. leaves produce 50 lbs. juice = 5 lbs. Extract.
100 lbs. leaves, dried, weigh 15½ lbs.
100 lbs. freshly picked leaves, when dried, yield only 11 lbs.

Dose.—3 to 6 grs., or more if specially required.

(Austr., alcoholic from **dried Leaves**; Belg., juice from **fresh Leaves**, evaporated and mixed with an equal quantity of alcohol, filtered and evaporated; Dan., Norw., and Swed., made from **Leaves** with weak Spirit; Dutch, alcoholic from **fresh herb**; Fr., clarified juice from **fresh Leaves** evaporated, also alcoholic extract from the **Seeds**; Ger., made with Water and Spirit from **fresh Leaves** and Stalks; Hung., juice from **fresh Leaves**, freed from Albumen and evaporated to a thick fluid, equal parts of Spirit added, filtered and again evaporated; Port., Aqueous from **dried Leaves**, also from **fresh Leaves** with Alcohol; Russ., made from **Leaves** with Water and Spirit; Span., clarified juice from **fresh Leaves**, also aqueous from **dried Leaves**, also alcoholic from **dried Leaves**; Swiss, from recently **dried Leaves** with Spirit; U.S., Abstractum (alcoholic), also an alcoholic extract from the **dried Leaf**, and a liquid extract from the same.)

SUCCUS HYOSCYAMI.

Freshly expressed juice, 3; Rectified Spirit, 1: mix and set aside seven days, then filter. Keep in a cool place.

Dose.—½ to 1 drm.

TINCTURA HYOSCYAMI.

Henbane leaves or flowering tops in No. 20 powder, 1; Proof Spirit, 8: macerate forty-eight hours with 6 of the spirit, pack in a percolator, and when it has drained pour on the remaining spirit, and when it ceases to drop, press, and filter and add Proof Spirit to make 8.
=(1 in 8).

Dose.—15 to 60 minims; 4 drms. have been given in severe insomnolence.

(Belg. and Port., 1 and 5, also fresh herb and Alcohol equal weights; Fr., 1 and 5, also Ethereal, 1 and 5 of Ether, sp. g. ·758, and Alcoolature with fresh Leaves and Spirit, equal weights; Russ., 1 and 10; Span. and Swiss, 1 and 5; U.S., by percolation, 15 in 100; all by weight. Not in the others.)

Not Official.

Hyoscyamus was unusually fine in 1878, and the Author prepared a Tincture of lbs. of fresh leaves, gathered from the stalk, on the spot, and at once cut small and laced in a 200 oz. bottle with 2 lbs. weight of Rectified Spirit, and digested 7 days; he proportions are weaker than P. B., but the aroma is much superior, and the ffect more calming.

The plants of the first year's growth being equally fine, he directed the roots of hese to be dug up in the spring and dried. The following preparations have been ade, and the root of Hyoscyamus promises to be as useful as the Belladonna root troduced by the Author in 1860.

CHLOROFORMUM HYOSCYAMI.—Hyoscyamus Root, in powder, 20; Chloroform ufficient to percolate 20.

LINIMENTUM HYOSCYAMI.—Hyoscyamus Root, in powder, 30; Rectified

Spirit, 20; digest 4 days, and place in a percolator; add Rectified Spirit sufficient, with 1 of Camphor, to percolate 30.

LINIMENTUM HYOSCYAMI COMP.—Liniment. Hyoscyami, 7; Chloroform. Hyoscyami, 1: mix.

The Compound Liniment, applied on piline as directed for Lin. Bellad. Comp., has been found most useful in relieving rheumatism.

TINCTURA HYOSCYAMI RADICIS.—Hyoscyamus Root, in powder, 5; Proof Spirit, 40: digest 7 days.

Dose.—20 to 60 mins.

Dr. Gee, of St. Bartholomew's Hospital, tried the effect of Tincture made from the fresh and dried leaves, from the seeds, and from the dried root; he found that made from the root the most active; he has also tried Hyoscyamine—$\frac{1}{15}$ of a grain injected subcutaneously never fails to produce in a strong man great giddiness, dryness of the mouth and throat, and acceleration of the pulse in a quarter of an hour.

HYOSCYAMINA, $C_{17}H_{23}NO_3$.—An Alkaloid obtained from the seeds of *Hyoscyamus niger*, the root of *Scopola carniolica*, and probably other allied plants, isomeric with Atropine but not regarded as identical with it.

It **crystallizes** in silky needles. Melts at 108·5° C.

An **amorphous** Hyoscyamine also occurs in commerce as a thick syrupy liquid, the dose of which is stated to be about the same as the crystalline. It would appear that in 1884 (*Pr.* xxxvi., 321) the amorphous was mainly composed of Hyoscine; but we think this cannot be so at the present time, seeing that the dose of Hyoscine is only $\frac{1}{10}$ that of Hyoscyamine.—See Merck's Bulletin, Nov. and Dec., 1889, pp. 86, 96.

Hyoscyamine is converted into Atropine under the influence of a fixed alkali at the ordinary temperature; ammonia also affects the alteration, but only very slowly. —*P.J.* xviii. 1048.

The same change takes place tolerably easily by simply heating to 110° C.

Conversely Atropine is re-convertible into Hyoscyamine.

As it is only slightly soluble in Water the Sulphate should be ordered when required in aqueous solution.

(Fr.; not in the other Pharmacopœias.)

HYOSCYAMINÆ SULPHAS.—Occurs in minute crystals which are soluble in water.

(U.S.; not in the other Pharmacopœias.)

Medicinal Properties.—In small doses it is a sedative for general restlessness and excitement, and in large doses it has been used for calming the excitement of acute mania, but for this purpose it is superseded by the Salts of Hyoscine.

Dose.—$\frac{1}{120}$ grain every half-hour or hour in asthma.—*L.* '87, ii. 368. $\frac{1}{6}$—$\frac{1}{4}$ grain in delirium tremens.—*L.* '85, i. 346. $\frac{1}{100}$ grain in chorea.—*T.G.* '86, 120. Toxic effects.—*B.M.J.* '88, ii. 421, 667; *T.G.* '87, 51.

HYOSCINA.—An alkaloid, also obtained from *Hyoscyamus niger;* owing to the difficulty of crystallization, it is always employed medicinally in the form of its crystallizable salts.

It is isomeric with Atropine and Hyoscyamine, but distinct in its physiological action.

HYOSCINÆ HYDROBROMAS, HYOSCINÆ HYDROCHLORAS, HYOSCINÆ HYDRIODAS are soluble in Water, but insoluble in strong Alcohol.

These salts are highly recommended in all forms of mania and cerebral excitement.

The Hydrobromate used as $\frac{1}{2}$ **per cent. solution** is a rapid, powerful, and unirritating dilator of the pupil. Its use is not accompanied by the dryness of the throat that so commonly follows the use of Atropine.—*L.* '86, ii. 1065.

Dose.—$\frac{1}{200}$ to $\frac{1}{100}$ grain increased to $\frac{1}{50}$ grain by **hypodermic injection**, or by the mouth, as a hypnotic and for calming delirium.—*T.G.* '85, 1, 107; *Pr.* xxxvii. 321; *B.M.J.* '88, ii. 75; '89, i. 942.

GUTTÆ HYOSCINÆ (*L.O.H.*).—Hydrobromate of Hyoscine, 2 grains; Distilled Water, 1 oz. Dissolve.

INJECTIO HYOSCINÆ HYPODERMICA.—Hydrobromate of Hyoscine, 1 grain; Distilled Water, 500 minims.

Dose.—5 minims as a sedative in nervous diseases. When given by the mouth at least double the dose is required to produce the same effect.—*L.* '89, ii. 736.

Not Official.

ICHTHYOCOLLA.

ISINGLASS.

The swimming bladder or sound of various species of Acipenser, prepared and cut into fine shreds.

This is included among the tests of the British Pharmacopœia.

This well-known substance was in the early London Pharmacopœias, and called Ising-glass or Fish glue; it was used in medicine as a nutrient. It is still to be found in most of the Continental Pharmacopœias. It is used for fining Wine, for which purpose gelatine does not answer.

(Austr., Belg., Fr., Hung., and U.S.; Dan., Russ., and Swiss, Colla Piscium; Port., Gelatina de Peixe; Span., Ictiocola; not in the others.)

Isinglass is used for Court Plaster and gold-beater's skin.

Test.—Isinglass is not soluble in cold water; Gelatine is. (Dr. Aquilla Smith.).

Isinglass 15 grs. to the oz. of Glycerine. Useful in some skin diseases.

Not Official.

ICHTHYOL.

SULPHO-ICHTHYOLATE OF AMMONIUM.

It is obtained by the action of Sulphuric Acid on a mineral oil distilled from peculiar fossil deposits, principally fish, and subsequent neutralisation with Ammonia.

A reddish-brown syrupy liquid with igneous bituminous odour and taste. Treated with Potash Solution it develops an odour of Ammonia. When dried in a water-bath it loses at least half its weight.

Solubility.—Entirely soluble in Water, partly soluble in Alcohol and Ether, entirely in a mixture of both.

It mixes readily with Glycerine, Fats, Oils, Soft Paraffin, and Lanoline.

Medicinal Properties.—It is stated to have remarkable effects in eczema. May be mixed with Soft Paraffin or Lard in the proportion of 20 to 30 per cent. decreased to 10 per cent. for moist eczema, and 50 per cent. reduced to 20 per cent. for the papular condition. The hand requires a stronger preparation than the face, and children a weaker one than adults. It is also used in acne rosacea and lichen urticaria. (It is not indicated in psoriasis.) It is also applied in rheumatism.

Internally it has been given for eczema, also in acute and chronic rheumatism, and in chronic catarrh of the stomach and intestines.—*L.* '83, i. 334; *B.M.J.* '87, i. 800.

The following formula is recommended for eczema:—Litharge, 10; Acetic Acid, 30: boil down to 20, add Olive Oil, Lard, and Ichthyol of each 10, all by weight, to make an **ointment.**—*L.* '83, i. 334.

In rheumatism (*L.* '86, ii. 645); in traumatic erysipelas (*L.* '87, i. 191); as an application in pruritus and prurigo, also for indolent ulcers (*B.M.J.* '86, i. 164.)

It is not without danger, as an application of 1 Ichthyol and 5 Vaseline to a child four years old produced stupor for twelve hours, but it completely recovered.—*B.M.J.* '84, ii. 1013.

Dose.—15 to 30 grains.

It is prescribed in pills containing 2 grains Ichthyol; made up with a mixture of Althæa 3, Liquorice Powder 3, and Tragacanth 2.

Also in capsules containing 4 grains.

NATRIUM SULPHO-ICHTHYOLICUM.—A brownish-black tar-like mass with a bituminous odour.

Solubility.—It makes a somewhat turbid solution with Water; it dissolves in a mixture of equal weights of Alcohol and Ether; it is soluble in Benzol.

No vapour of Ammonia is evolved from the aqueous solution upon warming it with Soda Solution.

The Sodium Salt is less fluid than the Ammonium Salt.

Medicinal Properties.—The same as the Ammonium Salt.

Not Official.

IGNATIA AMARA.

The seed of *Strychnos ignatii.*

(Fr., Fève de St. Ignaco; Port., Fava de S. Ignacio; Span., Haba de S. Ignacio; U.S., Ignatia.)

Medicinal Properties.—Similar in action to Nux Vomica.

Preparations.

EXTRACTUM IGNATIÆ AMARÆ.—Prepared by percolating Ignatia beans in fine powder, with Rectified Spirit, and evaporation.

Given in debility of the digestive organs.

Dose.—$\frac{1}{8}$ to 1 gr. in a pill three times a day.

(U.S., Abstractum; not in the other Pharmacopœias.)

TINCTURA IGNATIÆ AMARÆ.—Ignatia beans in fine powder, 1; Rectified Spirit sufficient to percolate 10.

Dose.—5 to 20 minims.

(U.S., 1 in 10; not in the other Pharmacopœias.)

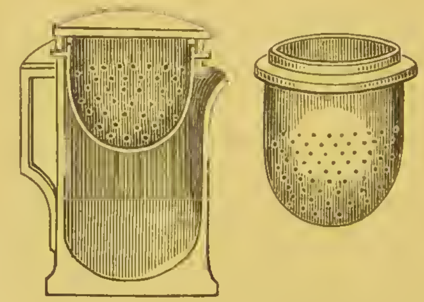
INFUSA.

INFUSIONS.

Infusions, though generally made with boiling water, are in some cases ordered to be made at a lower temperature, as Infusum Calumbæ, the starch of which would be dissolved by boiling water. The mucilage and vegetable albumen present are, however, dissolved by cold water, and these render the infusion liable to change.

The Infusion Pot, invented by the Author and placed in the Exhibition of 1851, answers well for Infusions, if proper sizes are used for the quantities ordered, so that the ingredients are held by the perforated basin in the upper part of the fluid and *under the surface.* The impregnated fluid becoming of greater density falls to the bottom, thus exposing the ingredients constantly to the continued action of fresh unimpregnated fluid until the action ceases, and the soluble matter is most effectually extracted. *When hot infusions are made, boiling water should be first poured into the pot, to thoroughly warm it; this being thrown out, the ingredients are put into the colander, and the requisite quantity of boiling water poured upon them. The new pots have the directions for use enamelled upon them.*

The annexed section of the Infusion Pot will show its construction:—



Concentrated Infusions are very largely used by general practitioners and some chemists; although very convenient and economical they have not the aroma of the freshly made infusion.

Infusions are very apt to change in hot weather, and several means have been proposed to preserve them. Small bottles when filled to the brim with recently made infusion, and kept at the boiling-point for five minutes, then tied over with a bladder, or stoppered whilst hot, keep well for several weeks. Inf. Gentian. Co., Inf. Aurant. Co., so treated, kept good for three months. Infusion of Senna, which would change in twelve hours in hot weather, will keep for several days perfectly good if one grain of Nitre be dissolved in each ounce of the infusion.

The following are the Infusions of the British Pharmacopœia. The full formulas for these Infusions will be found under the names of the substances from which they are prepared.

It has been thought desirable, for the convenience of the dispenser, to add a table of the ingredients and time required.

Boiling Distilled Water is to be used, unless otherwise stated.

INFUSUM ANTHEMIDIS . .	½ oz.		Water 10 oz.	Infuse ¼	hour and strain.
INF. AURANTII (peel cut small)	½ oz.		10	¼	,, ,,
INF. AURANTII COMP. Bitter Orange Peel, cut small Fresh Lemon Peel, cut small Cloves (bruised)	 ¼ oz. 56 grs. 28 grs.		10	¼	,, ,,
INF. BUCHU (leaves bruised) .	½ oz.		10	½	,, ,,
INF. CALUMBÆ (cut small) . .	½ oz.	cold	10	½	,, ,,
INF. CARYOPHYLLI (bruised)	¼ oz.		10	½	,, ,,
INF. CASCARILLÆ (No. 20 powder)	1 oz.		10	½	,, ,,
INF. CATECHU (coarse powder) Cinnamon (bruised) . . .	160 grs. 30 grs.		10	½	,, ,,
INF. CHIRATÆ (cut small) . .	¼ oz.	120° F.	10	½	,, ,,
INF. CINCHONÆ ACIDUM. Red Cinchona Bark in No. 40 powder . . . . . . Aromatic Sulphuric Acid . .	 ½ oz. 1 drm.		10	1	,, ,,
INF. CUSPARIÆ (No. 40 powder)	½ oz.	120° F.	10	1	,, ,,
INF. CUSSO (coarse powder) . .	¼ oz.		4	¼	*hour, not strained.*
INF. DIGITALIS (dried leaves) .	28 grs.		10	¼	hour and strain.
INF. ERGOTÆ (crushed) . . .	¼ oz.		10	½	,, ,,
INF. GENTIANÆ COMP. Gentian Root (sliced) . . Bitter Orange Peel (cut small) Fresh Lemon Peel (cut small)	 55 grs. 55 grs. ¼ oz.		10	½	,, ,,
INF. JABORANDI (cut small) .	½ oz.		10	½	,, ,,
INF. KRAMERIÆ (No. 40 powder)	½ oz.		10	½	,, ,,
INF. LINI . . . . Linseed Dried Liquorice Root (No. 20 powder)	150 grs. 50 grs.		10	2	,, ,,
INF. LUPULI	½ oz.		10	1	,, ,,
INF. MATICÆ (cut small) . .	½ oz.		10	½	,, ,,
INF. QUASSIÆ (chips) . . .	55 grs.	cold	10	½	,, ,,
INF. RHEI (sliced)	¼ oz.		10	½	,, ,,

INF. ROSÆ ACIDUM (broken petals) Dil. Sulph. Acid	¼ oz. 1 drm.	Water 10 oz.	Infuse ½	hour	and strain.
INF. SENEGÆ (No. 20 powder)	½ oz.	10	½	„	„
INF. SENNÆ (Senna) Ginger (sliced)	1 oz. 28 grs.	10	½	„	„
INF. SERPENTARIÆ (No. 20 pow.)	¼ oz.	10	½	„	„
INF. UVÆ URSI (bruised)	½ oz.	10	1	„	„
INF. VALERIANÆ (bruised)	¼ oz.	10	1	„	„

General Directions given in German Pharmacopœia.—Infusions, for which the amount of the respective substances is not specified, are prepared so that 10 parts of strained product are obtained from 1 part of substance. In the case of substances for which a limit of dose is given the quantity of substance is to be specified by the physician.

Directions in United States Pharmacopœia.—An ordinary Infusion, the strength of which is not directed by the physician nor specified by the Pharmacopœia, shall be prepared as follows:—Put 10 of the substance into a suitable vessel, provided with a cover, pour upon it 100 of boiling water, and let it stand two hours; then strain and pass enough water through the strainer to make the Infusion weigh 100 parts. The strength of Infusions of energetic or powerful substances should be specially prescribed by the physician.

INJECTIONES HYPODERMICÆ.

HYPODERMIC INJECTIONS.

The following are now contained in the British Pharmacopœia, the formulas for which will be found under the names of the substances from which they are prepared:—

INJECTIO APOMORPHINÆ HYPODERMICA		2	grs. in	100	minims.
INJECTIO ERGOTINI HYPODERMICA	about	1	„	3	„
INJECTIO MORPHINÆ HYPODERMICA		1	„	10	„

Most of the medicines used hypodermically can be obtained either in the form of Gelatine lamels or compressed discs.

Not Official.

INULA.

ELECAMPANE.

The root of the *Inula helenium*.

It contains large quantities of Inulin, a body allied to starch; also a crystalline bitter substance Helenin or Alantcamphor.

(Belg., Dan., Dutch, Fr., Ger., Port., Russ., Span., Swed., Swiss, and U.S.)

HELENINE, $C_6H_{10}O$.—Colourless acicular crystals, almost insoluble in Water, but readily soluble in hot Alcohol, Ether, and Volatile Oils. Has been found to possess powerful antiseptic properties, and has been given in bronchial pneumonia, tuberculosis, and diphtheria.

Dose.—⅐ to ½ grain.

IODOFORMUM.

IODOFORM.

CHI_3, eq. 394.

A product of the action of Iodine on a mixture of Alcohol and Solution of Carbonate of Potassium.

A yellow crystalline substance, which occurs in minute scales, also in the form of powder as precipitated Iodoform. It has a peculiar odour. Its solutions have a neutral reaction.

Solubility.—Very sparingly soluble in Water; 1 in 7 of Ether; 1 in 14 of Chloroform; 1 in 120 of Rectified Spirit. It is also soluble in the fixed and volatile oils, and about 1 in 100 of Glycerine; 1 in 30 of Olive Oil; 1 in 3½ of Bisulphide of Carbon; sparingly in Benzin.

Precipitated Iodoform frequently gives a turbid solution in Chloroform and Bisulphide of Carbon, owing to the dampness of the powder, the adhering water being insoluble.

It rapidly dries on free exposure to air, and will then form a clear solution.

Tests.—When heated it first melts to a brown liquid, then gives off brown and violet vapours, leaving a black residue which entirely disappears on continued ignition. Warmed with an alcoholic solution of Potash, Formate and Iodide of Potassium result, and from the resulting fluid when acidified with Nitric Acid, Iodine is liberated, the mixture acquiring a brown colour, or when cold a blue colour, on the addition of Mucilage of Starch.

(Austr., Belg., Dutch, Fr., Ger., Hung., Port., Russ., Span., Swed., Swiss, and U.S.; not in the others.)

Medicinal Properties. Antiseptic, disinfectant, and local anæsthetic. Useful in chancres or syphilitic sores, the **powder** being applied, or an **ointment** (1 drm. to 1 oz. of Lard), or dissolved in Oil of Eucalyptus. Used to relieve the pain of cancer and abate the progress of the disease; also to relieve sciatica and neuralgia.

A good **application** is made by dissolving 1 of Iodoform in 10 of Collodion.

As a paint, or with an insufflator, in diphtheria (*L.* '86, i. 476), (*L.M.R.* '89, 20); on its antiseptic properties (*B.M.J.* '87, ii. 1439), (*T.G.* '87, 767); in phthisis (*B.M.J.* '88, i. 186); hypodermically in syphilis (*T.G.* '85, 643); to prevent pitting in smallpox (*L.* '86, ii. 889).

As an antiseptic, Iodoform in fine powder is used as a **spray.**

Eucalyptus Oil, Balsam of Peru, and Coumarin prepared from Tonka beans have been used to cover the smell of Iodoform.

Oil of Geranium answers the purpose best (5 mins. to 2 drms.).

Dose.—1 to 3 grains; the Iodoform should be finely powdered, or, still better, use precipitated Iodoform, and at least twenty times its weight of mucilage employed to make it miscible with water; or it may be given in the form of pills, made with equal parts Glucose and Treacle.

Iodoform is incompatible with Calomel.—*P.J.* xvii. 882; *T.G.* '88, 200.

Preparations.

SUPPOSITORIA IODOFORMI.

Iodoform, in powder, 36 grs.; Oil of Theobroma, 144 grs.: rub the Iodoform with 44 grs. of the Oil of Theobroma in a slightly warmed mortar, and add this to the remainder of the Oil of Theobroma previously melted at a low temperature: mix thoroughly, and pour into moulds of the capacity of 15 grs.

Each suppository contains 3 grs. of Iodoform.

UNGUENTUM IODOFORMI.

Iodoform, 1; Benzoated Lard, 9: melt the Lard at a low temperature, add the Iodoform, and stir together until dissolved and finally cooled. =(1 in 10).

(U.S., 1 in 10; not in the other Pharmacopœias.)

Not Official.

IODOFORM ANTISEPTIC DRESSINGS.—**Gauze** contains 5, 10, and 20 per cent., **Wool** and **Lint** 3, 5, and 10 per cent.

BOUGIES OF IODOFORM AND EUCALYPTUS FOR GONORRHŒA (Cheyne).—Iodoform, 5 grs.; Oil of Eucalyptus, 10 minims; Oil of Theobroma, 35 grs. in each bougie, which should be 4 inches long and the diameter of No. 10 catheter.

Treatment.—The patient to pass water, then lie on his back, introduce the bougie (first dipped in Eucalyptus Oil or Carbolic Oil 1 in 20), close the orifice with a pad of Boracic Lint covered with Gutta-percha tissue, secure in position with strapping. The patient should refrain from passing water for four or five hours. If the case be severe the introduction of the bougie is repeated after passing water. The next day use an injection of Sulphocarbolate of Zinc, 2 grs. to 1 oz., for two or three days; and on the third or fourth day, when the symptons have entirely subsided, use an injection of Sulphate of Zinc, 2 grs. to 1 oz. The treatment can be commenced as early as the first day or as late as the seventh day of the disease. The patient must abstain from alcohol.—*B.M.J.* '80, ii. 125; *L.* '82, ii. 176, 213.

INSUFFLATIO IODOFORMI (*T.H.*).—Iodoform in fine powder, 2; Starch in powder, 1: mix.

Antiseptic and mildly caustic.

INSUFFLATIO IODOFORMI (AURAL) (*T.H.*).—Iodoform in fine powder, 1; Subnitrate of Bismuth, 1: mix.

Antiseptic and mildly caustic.

NEBULA IODOFORMI (*T.H.*).—Iodoform, 40 grs.; Ether (sp. g. ·735), 1 oz. dissolve.

A strong antiseptic and detergent.

UNGUENTUM IODOFORMI CUM ATROPINA (*L.O.H.*).—Precipitated Iodoform, 60 grs.; Atropine, 2 grs.; Soft Paraffin, 1 oz: heat the Atropine and Paraffin till dissolved: stir, and while cooling add the Iodoform.

Not Official.

IODOL.

TETRAIOD PYRROL.

C_4I_4NH.

Prepared by precipitating with Potassium Iodo-iodide a moderately pure Pyrrol obtained from "animal oil." It forms a light brown microcrystalline powder without taste, having a faint odour of Thymol, containing 90 per cent. of Iodine, and giving off Iodine at 212° F. (100° C.).—*P.J.* xvi. 368.

Solubility.—Nearly insoluble in Water; 1 in 18 of Rectified Spirit, 1 in 150 of Chloroform, 1 in 1½ of Ether, 1 in 155 of Glycerine. It is stated to be soluble 1 in 3 of Absolute Alcohol, but the sample we examined gave 1 in 6½.

Medicinal Properties.—Antiseptic; used for the same purposes as Iodoform, but it is free from the objectionable odour of the latter, and is stated not to be so poisonous.

In ophthalmic surgery.—*B.M.J.* '86, i. 1229; *L.M.R.* '86, 257; '87, 125.
In ear diseases.—*L.* '86, ii. 745; *T.G.* '88, 192.
In diphtheria.—*B.M.J.* '87, i. 789.
In naso-pharyngeal diseases.—*B.M.J.* '87, ii. 1439.

IODUM.

IODINE.

I, eq. 127.

A non-metallic element, obtained principally from the ashes of seaweeds, in the western islands of Scotland and Ireland; is also largely manufactured in France; also from mineral Iodides and Iodates.

Sublimed in laminar crystals of a dark colour and metallic lustre, and of peculiar odour. Melts at 107° C., and volatilises considerably at ordinary temperatures. Its vapour is a beautiful purple red.

It stains the skin a yellowish-brown, which can be removed by Alkali or Hyposulphite of Sodium.

Solubility.—1 in 7000 of Water; 1 in 12 of Rectified Spirit; 1 in 4 of Ether; 1 in 25 of Chloroform; 1 in 6 of Bisulphide of Carbon; 1 in 65 of Glycerine; soluble in a solution of Iodide of Potassium.

Tests.—Entirely soluble in Ether. It sublimes without leaving any residue, and the portion which first comes over does not include any slender colourless prisms, emitting a pungent odour (Cyanide of Iodine). 12·7 grains dissolved in 1 ounce of Water containing 15 grains of Iodide of Potassium require for complete decoloration 1000 grain-measures of the volumetric solution of Hyposulphite of Sodium; *i.e.* to change the whole of the equivalent 12·7 grains of Iodine into colourless Iodide and Tetrathionate of Sodium. A trace of Iodine added to Mucilage of Starch gives a deep blue colour, disappearing on boiling, but returning on cooling, if the boiling has not been too prolonged.

(Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Norw., Port., Russ., Span., Swed., Swiss, and U.S.)

Medicinal Properties.—Antiseptic, alterative, deodoriser, disinfectant; also irritant or vesicant according to the strength employed. It acts specially as a stimulant to the entire lymphatic system, causing absorption, promoting elimination by the kidneys. Used in chronic inflammation, to promote absorption and elimination in dropsies (pleuritic effusion, hydrocele, &c.), and chronic rheumatism. In the form of Iodide of Potassium it is specific in the later stages of syphilis. Most efficacious in glandular enlargements and morbid growths, as in bronchocele, externally and by hypodermic injection, in scrofulous glands of the neck and abdomen, and as an alterative in obstinate mucous discharges; caution, however, is required, as it may occasion wasting in healthy glands, such as the mammæ and testes. Externally the **liniment** or **tincture** is applied in chronic skin diseases, and to swollen and indurated parts and diseased joints, to cause absorption. A few drops of the tincture in half a pint of hot water may be **inhaled** in some forms of chronic bronchitis and phthisis. Best administered in the form of **tincture,** largely diluted with water. It is applied as a **gargle**, 1 or 2 of the tincture in 32 of water, for ulceration of the throat.

On injections in goître.—*B.M.J.* '85, i. 653, 715.

Dose.—Of free Iodine, $\frac{1}{2}$ gr., gradually increasing.

Contained in Pilula Ferri Iodidi and Syrupus Ferri Iodidi.

The Iodides of Arsenic, Mercury, Potassium, Sodium, and Sulphur are official; those of Cadmium and Iron are not official.

Incompatibles.—Ammonia, Metallic Salts, Vegetable Alkaloids.

Antidotes.—Emetics aided by Demulcent Drinks, Starch, Flour, etc., diffused in water; Hypodermic Injection of Morphine to relieve pain.

Preparations.

LINIMENTUM IODI.

Iodine, 5; Iodide of Potassium, 2; Glycerine, 1 (by weight); Rectified Spirit, 40: dissolve. =(about 1 of Iodine in 9).

Glycerine has been introduced in the place of Camphor.

(Not in the other Pharmacopœias.)

Proper strength to paint upon bursæ and enlarged glands.

LIQUOR IODI. *Syn.* Lugol's Solution.

Iodine, 22 grs.; Iodide of Potassium, 33 grs.; Distilled Water, sufficient to produce 1 fl. oz. =(1 of Iodine in 20).

The strength has been slightly increased, from 20 to 22 grs.

(Fr., Soluté d'Iode Ioduré, Iodine 1, Iodide of Potassium 1, Alcohol 10. Water 18; Norw. and Swed., Solutio Superiodeti Kalici, and Russ., Liquor Iodi cum Kalio Iodato, Iodine 1, Iodide of Potassium 2, Distilled Water 97; Port., Soluto Iodo-iodetado, Tincture of Iodine 6, Iodide of Potassium 1, Water 13; U.S., Liquor Iodi Co., Iodine 1, Iodide of Potassium 2, Distilled Water 17; all by weight. Not in the others.)

TINCTURA IODI.

Iodine, $\frac{1}{2}$; Iodide of Potassium, $\frac{1}{2}$; Rectified Spirit, 20: dissolve. =(1 of Iodine in 40).

The quantity of Iodide of Potassium has been doubled.

Dose.—5 to 20 minims. Also an excellent application to the throat in diphtheria.

(The following without the Iodide of Potassium:—Austr., 1 and 15; Belg. and U.S., 1 in 12·5; Fr., 1 and 12; Dan., Norw., and Swed., Sol. Iodi Spirituosa, 1 in 20; Dutch, 1 in $12\frac{1}{2}$; Ger., Hung. and Russ., 1 and 10; Port. and Swiss, 1 and 9; Span., Solucion Alcoholica de Iodo, 1 and 15. All by weight.)

Hyposulphite of Sodium decolorizes Solutions of Iodine.

UNGUENTUM IODI.

Iodine, 32 grs.; Iodide of Potassium, 32 grs.; Glycerine, 1 drm.: rub together, add Prepared Lard, 2 oz., and mix. =(1 of Iodine in 31).

Glycerine has been substituted for Proof Spirit.

Useful application for chilblains.

(Fr., Pommade d'Iodure de Potassium Ioduré, Iodine 1, Iodide of Potassium 5, Benzoated Lard 40, Water 5; Hung., Tincture of Iodine 1, Simple Ointment 9; Port., Pomada de Iodeto de Potassio Iodada, Iodine 1, Iodide of Potassium 4, Water 5, Lard 40; Span., Pomada de Ioduro Potasico Iodado, Iodine 2, Iodide of Potassium 6, Water 4, Lard 45; U.S., Iodine 4, Iodide of Potassium 1, Water 2, Benzoinated Lard 93; mix. Not in the others.)

VAPOR IODI. Inhalation of Iodine.

Tincture of Iodine, 1 drm.; Water, 1 oz.; mix in a suitable apparatus, and having applied a gentle heat, let the vapour that rises be inhaled.

(Not in the other Pharmacopœias.)

Not Official.

CAUSTICUM IODI (*B.S.H.*).—Iodine, 180 grs.; Iodide of Potassium, 60 grs.; Rectified Spirit, 1 oz.: dissolve.

Used in cases of lupus and of indolent (*i.e.* non-phagedænic) tertiary syphilitic ulcers.

INHALATIO IODI C. CONIO.—$\frac{1}{2}$ drm. to 1 drm. of Succus Conii being added to the above Vapor Iodi.

IODO-GLYCERINE SOLUTION (*Morton's*).—Iodine, 10 grs.; Iodide of Potassium, 30 grs.; Glycerine, 1 oz.: dissolve.

For spina bifida, inject 30 minims, without allowing the fluid contents of the tumour to escape.—*B.M.J.* '85, i. 1098; '86, i. 874; '87, ii. 1275.

PIGMENTUM IODI (*B.S.H.*).—Iodine, 2; Iodide of Potassium, 1; Glycerine 4: dissolve.

Used to destroy vegetable parasites.

PIGMENTUM PICIS C. IODO (*B.S.H.*), (*Coster's Paste*).—Iodine, 120 grs.; Rectified Oil of Tar, 1 oz.: dissolve cautiously, applying a gentle heat as required.

Specially recommended in cases of ringworm.

LIQUOR AMMONIÆ IODIDI (Sir J. Y. Simpson).—Liq. Ammon. Fortiss., 2 oz.; Iodine, 10 grs.; Iodide of Potassium, 20 grs.; Rectified Spirit, 1 oz.: dissolve.

TINCTURA IODI DECOLORATA (*B.P.C.*).—Iodine, 250 grs.; Rectified Spirit, 5½ ozs.: dissolve with a gentle heat: when cold add Stronger Solution of Ammonia, 10 fl. drs.; keep the mixture in a warm place until decolorised,* after which dilute with Rectified Spirit to make 20 ozs.

The Iodine in this preparation seems to exist wholly as Iodide of Ammonium.

(Russ.).—Iodine, 10; Hyposulphite of Soda, 10; Distilled Water, 10: dissolve and add Alcohol Ammonia, sp. g. 0·808 (10 per cent.), 16. Agitate, and then add Alcohol (sp. g. ·830—·834) 75; all by weight.

IPECACUANHA.

IPECACUANHA.

The dried root of *Cephaëlis ipecacuanha*, from Brazil. The active principle resides in the bark, the inner or woody part possessing scarcely any of its virtues.

Ipecacuanha contains about 1¼ per cent. of an Alkaloid, *Emetine*, separable as a whitish amorphous powder. It is very sparingly soluble in Water, forming a slightly alkaline solution; 1 in 6 of Rectified Spirit; 1 in 6 of Chloroform; sparingly in Ether and fixed oils. It is readily dissolved by acids and fixed alkalies; it assumes an intense and permanently yellow colour with solution of Chlorinated Lime and Acetic Acid. This test applied to powder of Ipecacuanha will turn it yellow.

(Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Norw., Port., Russ., Span., Swed., Swiss, and U.S.)

Medicinal Properties.—Diaphoretic and expectorant. Emetic in large doses. Ipecacuanha has long been relied on in the East for the cure of dysentery in the acute stage. When the evacuations are frequent and accompanied with mucus, 20 to 30 grains are given; and if the stomach rejects it, a little opium is given with it, or a mustard poultice applied to the stomach. It relieves some forms of vomiting. It is commonly added to aperient pills. A **spray** of the wine of Ipecacuanha has been strongly recommended by Drs. Ringer and Murrell for chronic bronchitis and asthma.

Ipecacuanha in the treatment of anthrax and carbuncle.—*L.* '88, i. 269.

Is a powerful hepatic stimulant, it increases slightly the secretion of intestinal mucus, but has no other apparent stimulant effect on the intestines.—Dr. Rutherford.

Applied to the bites and stings of insects.

Dose.—In powder as an emetic, 15 to 30 grs.; as an expectorant, etc., ½ to 2 grs.

Prescribed in ¼ to 1 gr. doses as an auxiliary in alterative pills.

Contained in Pil. Conii Comp.

Incompatibles.—Salts of Lead, Mercury, Vegetable Acids, Astringent Infusions.

Preparations.

PILULA IPECACUANHÆ CUM SCILLA.

Compound powder of Ipecacuanha, 3; Squill, in powder, 1; Ammoniacum, in powder, 1; Treacle, *q. s.*

=(3 Dover's Powder in 7, or about 1 of Opium in 23).

Dose.—5 to 10 grs.

(Port., similar to Brit.; not in the other Pharmacopœias.)

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* B.P.C. states that if not further diluted it may be prescribed as **Tinctura Iodi Decolorata Fortior.**

PULVIS IPECACUANHÆ COMPOSITUS. *Syn.* PULVIS IPECACUANHÆ CUM OPIO; PULVIS DOVERI.

Ipecacuanha, in powder, 1; Opium, in powder, 1; Sulphate of Potassium, 8: mix. =(1 Opium, 1 Ipecac. in 10).

Dose.—5 to 10 grs.

(In all the Pharmacopœias, and is the well-known Dover's Powder; Austr., Ger. and Russ., Pulvis Ipecacuanhæ Opiatus; Hung. and Swiss, Pulvis Doveri; Dan., Norw. and Swed., Pulv. Ipecac. Thebaicus; Dutch, Pulvis Opii Compositus; Fr., Poudre d'Ipecacuanha Opiacée; Port., Po de Ipecacuanha Composto; U.S., Pulv. Ipecac. et Opii; all same strength as Brit.; Span., Polvo de Ipecacuana Opiado, 1 Opium, 1 Ipecacuanha, in 11·4; Belg., 9 *Extract* Opium, 9 Ipecac., in 100.)

The original Powder of Dr. Dover was prepared by fusing together 4 parts of Nitrate of Potash with 4 of Sulphate of Potash, and reducing the product to fine powder; to this was added 1 of Ipecacuanha, 1 of Opium, and 1 of Liquorice; the French Codex has now made it same strength as British; the Belgian still retains the powdered Extract of Opium instead of Opium itself, which nearly doubles the strength.

An admirable anodyne diaphoretic; it is also most useful in dysentery and diarrhœa; in the latter case it is sometimes combined with Calomel.

3 or 4 grs. will relieve heartburn, probably by allaying irritability.

TROCHISCI IPECACUANHÆ.

$\frac{1}{4}$ gr. of Ipecacuanha in each lozenge.

Dose.—1 to 3 lozenges.

(Austr., $\frac{2}{13}$ grain; Belg. and Dan., about $\frac{1}{4}$ grain; Dutch, Fr., Port., and Swiss, about $\frac{1}{6}$ grain: Russ., about $\frac{1}{5}$ grain; Span., about $\frac{1}{2}$ grain; U.S, $\frac{1}{4}$ grain; not in the others.)

TROCHISCI IPECACUANHÆ ET MORPHINÆ.

Ipecacuanha $\frac{1}{12}$ gr., Hydrochlorate of Morphine $\frac{1}{36}$ gr., in each lozenge.

Dose.—1 or 2 lozenges occasionally.

(U.S. Ipecac. $\frac{2}{25}$ gr., Sulphate of Morphine $\frac{1}{40}$ gr., in each.)

VINUM IPECACUANHÆ.

Ipecacuanha, in coarse powder, 1; Acetic Acid, 1; Distilled Water, *q. s.*; Sherry, 20: macerate the Ipecacuanha in the Acetic Acid twenty-four hours; pack in a percolator, and pass sufficient Distilled Water through to produce 20; evaporate the liquor to dryness over a water bath. Powder the residue and macerate it in the Sherry forty-eight hours, with occasional agitation, and filter. =(1 in 20).

The root is practically exhausted with half the quantity of water given above.

In one experiment 16 oz. of root yielded 3 oz. and 24 grs. of dry extract, of which only 122 grs. did not dissolve in the Wine.

The general opinion appears to be against evaporating the percolate further than to a soft extract, as the alkaloid appears to be damaged by continued heating.

It is proposed to make the Vinum from a standardised Acetic Extract, or form a standardised Alcoholic Fluid Extract.

Dose.—As an expectorant, etc., 5 to 40 minims; as an emetic, 3 to 6 drms.

(Belg., 6 in 100 of Malaga; Dan., Ger., Norw., Russ., and Swed., 1 and 10 of Sherry; Dutch, 1 and 10 of Malaga; Port., 1 in 20 of Port; U.S. 7 fluid Extract, and 93 Stronger White Wine; not in the others.)

Not Official.

ACETUM IPECACUANHÆ (*B.P.C.*).—Ipecacuanha Root in No. 20 Powder, 1 oz.; Acetic Acid, 2 ozs.: macerate the powder in 1 oz. of the Acid for twenty-four hours, then pack in a percolator. Mix the remainder of the acid with 10 ozs.

of Distilled Water and percolate with the mixture, continuing the percolation with Distilled Water until 20 ozs. is obtained.

Dose.—5 to 40 minims as an expectorant.

This has been taken from the Throat Hospital Pharmacopœia.

SYRUPUS IPECACUANHÆ.—

Austr., Ger., and Hung.—Bruised Ipecacuanha, 1; Rectified Spirit, 5; Water, 40: digest forty-eight hours, and filter 40; add 60 of Sugar, and dissolve to make 100 of Syrup.

Belg.—Tincture of Ipecacuanha, 35; Simple Syrup, 1000.

Dutch.—Tincture of Ipecacuanha, 1; Syrup, 19.

Fr.—Alcoholic Extract of Ipecacuanha, 1; Alcohol (à 60), 3; Water, 34; Sugar, 63.

Port.—Alcoholic Extract of Ipecacuanha, 1; Water, 35; Sugar, 65.

Russ.—Ipecacuanha, 1; Rectified Spirit, 5; Water, 36; Sugar, 66.

Span.—Alcoholic Extract of Ipecacuanha, 8; Water, 100; Syrup, 1150.

Swiss.—Ipecacuanha, 1; Spirit, 10; Tincture of Ipecacuanha, 1; Syrup, 9.

U.S.—Fluid Extract of Ipecacuanha, 5; Syrup, 95.

All by weight.

SYRUPUS IPECACUANHÆ ACETICUS (*B.P.C.*).—Vinegar of Ipecacuanha (*B.P.C.*), 20 ozs.; Refined Sugar, 36 ozs.: dissolve with a gentle heat. Sp. g. 1·33.

Dose.—15 to 120 minims.

TINCTURA IPECACUANHÆ.—Bruised Ipecacuanha, 1; Proof Spirit, 10; digest eight days, press, and make up to 10.

(Austr., 1 in 10; Belg., Fr., Port., and Span., 1 and 5; Dutch, Ger., Russ., Swed., and Swiss, 1 and 10; Hung., 1 in 5; all by weight; not in the others.)

JABORANDI.

JABORANDI.

The dried leaflets of *Pilocarpus pinnatifolius.* It owes its properties to an alkaloid Pilocarpine, the Nitrate of which is official.

(Belg., Fr., Ger., Port., Russ., and Span.; U.S. (Pilocarpus); not in the others.)

Medicinal Properties.—Diaphoretic, sialogogue, and galactagogue. Useful in Bright's disease. It is antagonistic in its action to Belladonna.

Is a very feeble hepatic stimulant.—Dr. Rutherford.

Preparations.

EXTRACTUM JABORANDI.

Macerate 16 of Jaborandi, in No. 40 powder, with 40 of Proof Spirit for forty-eight hours; then transfer to a percolator, and when the fluid ceases to pass continue the percolation with Water until 40 of liquid has been collected; evaporate the percolated liquid to a suitable consistence.

Dose.—2 to 10 grs.

(Belg. and Fr.; not in the others.)

INFUSUM JABORANDI.

Jaborandi, cut small, 1; Boiling Distilled Water, 20: infuse half an hour and strain. =(1 in 20).

Dose.—1 to 2 oz.

(Span., 1 in 60; not in the others.)

TINCTURA JABORANDI.

Jaborandi, in No. 40 powder, 5; Proof Spirit, 20: macerate for forty-eight hours in ¾ of the Spirit, agitating occasionally; pack in a percolator; when it ceases to drop pour on the remaining Spirit; press the marc, filter, and add Proof Spirit to make 20. =(1 in 4).

Dose.—30 to 60 minims.

(Belg., Fr., Russ., and Span., 1 and 5; not in the others.)

PILOCARPINÆ NITRAS. See p. 312.

JALAPA.

JALAP.

The dried tubercules of *Ipomœa purga* (Hayne), otherwise called *Exogonium purga* (Bentham); imported from Mexico.

This Jalap contains, as its principal ingredient, a glucoside **Convolvulin**, insoluble in Ether, and constituting all but a small part of Resina Jalapæ B. P.

Spurious Jalap (Jalap Wood, Jalap Stalks), from Convolvulus or Ipomœa Orizabensis, also yields a glucoside **Jalapin**, soluble in Ether, and almost, if not completely, identical with Resina Scammonii B. P. from Convolvulus Scammonia.

It is unfortunate that the name Jalapin should have been applied to the resin of *spurious* Jalap, which is identical with the *true* Resin of Scammony, and which is quite distinct from the Official Resin of Jalap.

Test.—Treated as for the preparation of Resin of Jalap, not less than 10 per cent. of Resin should be obtained, of which not more than $\frac{1}{10}$ should be soluble in Ether.

(Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Norw., Port., Russ., Span., Swed., Swiss, and U.S.)

Medicinal Properties.—A brisk cathartic, operating sometimes painfully, producing copious watery discharges. From its hydragogue powers, it is especially applicable to dropsy, when it is usually combined with Bitartrate of Potassium or Calomel.

Is a moderately powerful hepatic, and a powerful intestinal stimulant.—Dr. Rutherford.

Dose.—10 to 30 grs.

Contained in Pulvis Scammonii Compositus.

Preparations.

EXTRACTUM JALAPÆ.

Jalap, in coarse powder, 1; Rectified Spirit, 5; Distilled Water, 10: macerate the Jalap in the spirit for seven days, press out the tincture, then filter and distil off the spirit, leaving a soft extract: again macerate the residual Jalap in the water for four hours, express, strain through flannel, and evaporate by a water bath to a soft extract; mix the two extracts, and evaporate at a temperature not exceeding 140° F., to a proper consistence for forming pills.

100 lbs. of Jalap yield 50 lbs. of extract.

Dose.—5 to 15 grs.

(U.S. Abstractum; not in the other Pharmacopœias.)

PULVIS JALAPÆ COMPOSITUS.

Jalap, in powder, 5; Acid Tartrate of Potassium, 9; Ginger, in powder, 1: mix. =(1 in 3).

Dose.—20 to 60 grs.

(Dan., Jalap 2, Sulphate of Potash 1; Russ., Jalap 1, Bitartrate of Potassium 2; Span., Jalap 1, Cream of Tartar 1, Magnesia 1; U.S. Jalap 35, Bitartrate of Potassium 65; not in the others.)

RESINA JALAPÆ.

A resin obtained from Jalap by means of Rectified Spirit.

Digest 8 of Jalap (in No. 40 powder) with 16 of Rectified Spirit in a covered vessel, heating gently, for twenty-four hours; then transfer to a percolator, and when the Tincture ceases to pass continue the percolation with successive portions of Spirit until it ceases to dissolve anything more. Add to the Tincture 4 of Distilled Water, and distil off the Spirit by a water bath. Remove the residue while hot to an open dish and allow it to become cold. Pour off the supernatant liquid from the Resin, wash this two or three times with hot water, and dry it on a porcelain plate by the heat of a stove or water bath.

Test.—The powder yields little or nothing to warm Water, and not more than 10 per cent. to Ether.

Jalap yields from 15 to 20 per cent. of resin.

Easily soluble in Rectified Spirit; insoluble in Oil of Turpentine.

Dose.—2 to 5 grs.

(Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Norw., Port., Russ., Span., Swed., Swiss, and U.S.)

TINCTURA JALAPÆ.

Jalap, in No. 40 powder, 1; Proof Spirit, 8: macerate forty-eight hours in 6 of the spirit, agitating occasionally, pack in a percolator, and when the fluid ceases to pass, pour on the remaining spirit, press, filter, and add Proof Spirit to make 8. =(1 in 8).

Dose.—½ to 2 drms.

(Belg., Fr., and Port., 1 and 5 by weight; not in the others.)

Not Official.

TINCTURA JALAPÆ RESINÆ (Russ.).—Resin of Jalap, 1; Spirit (90 p. c.), 10.

SAPO JALAPINUS (Ger. and Russ.).—Resin of Jalap, 2; Soap, 2; Sp. Wine, 4; M.S.A.

JUNIPERI OLEUM.

OIL OF JUNIPER.

The Oil distilled in Britain from the full grown unripe green fruit of *Juniperus communis*.

Sp. g. ·860 to ·880. Of very superior flavour to the imported Oil.

Messrs. Schimmel state that Doubly Rectified Oil of Juniper has sp. g. ·858.

Solubility.—1 in 20 of Rectified Spirit, but it does not become quite clear: it mixes with equal parts of Absolute Alcohol, but if more Alcohol be added it becomes milky.

(Austr. and U.S., sp. g. ·870; Belg., sp. g. ·853 to ·911; Dan., Fr. (Genièvre), Ger.; Hung., sp. g. ·840—·900; Norw.; Port. (Essencia de Zimbro), sp. g. ·855—879; Russ., sp. g. ·850—·900; Span. (Esencia de Enebro); Swed., Swiss; not in Dutch.)

Medicinal Properties.—Stimulant, carminative, and diuretic, the latter property constituting its chief medicinal value. Used in debilitated dropsical cases, either alone or combined with other diuretics.

Dose.—1 to 3 minims.

Preparation.

SPIRITUS JUNIPERI.

Oil of Juniper, 1; Rectified Spirit, 49: dissolve. =(1 in 50).

Dose.—30 to 60 minims.

(Fr., 1 in 50; Russ., 1 and 96; U.S. 3 in 100, by weight; Dutch, Port., and U.S., have a compound spirit; Austr., Ger., and Swiss, 1 fruit in 4, by distillation; Span., 3 fruit in 19 by distillation: not in the others.)

Not Official.

OLEUM JUNIPERI EMPYREUMATICUM. OLEUM CADINUM. HUILE DE CADE. JUNIPER TAR. An empyreumatic oil, resembling liquid pitch, obtained by the dry distillation of the wood of the *Juniperus oxycedrus*.

Used as a stimulant in cases of Psoriasis and of Chronic Eczema.

(Austr., Belg., Dan., Fr., Hung., Norw., Port., Russ., Span. (Aceite de Enebro), Swed., and Swiss; not in the others.)

Not Official.

KAIRIN.

A synthetically prepared alkaloid, Oxychinolinemethyl Hydride, $C_{10}H_{13}NO$, the Hydrochlorate of which is readily soluble in Water.

A yellowish white crystalline powder, with a nauseous taste.

A drop of solution of Perchloride of Iron added to an aqueous solution of Kairine gives a violet colour, quickly changing to brown.

Medicinal Properties.—A powerful antipyretic.

Dose.—10 grains given in a capsule or wafer every hour in cases of fever.—*P.J.* xiv. 383; *L.* '83, ii. 344, 552; *L.* '84, ii. 32, 39, 559; *B.M.J.* '88, i. 184; *T.G.* '85, 122.

KAMALA.

KAMALA.

Syn. GLANDULÆ ROTTLERÆ. WURRUS.

A fine, granular, mobile, orange-red powder, consisting of minute glands and hairs, obtained from the surface of the fruits of *Mallotus Phillippinensis*; imported from India.

Solubility.—Scarcely mixing with water, but about 60 per cent. of a sample (containing 6 per cent. of ash) was soluble in, and formed a red-coloured solution with, Alcohol, Chloroform, or Ether; for the most part soluble in Liquor Potassæ; sparingly in Benzin.

Test.—Ether dissolves most of it, the residue consisting principally of tufted hairs. On ignition in air it should yield 4 or 5, or at most 10 per cent. of ash. Most commercial samples contain much more than this, from 20 to 50 per cent. of ash.—*P.J.* xv. 654.

(Austr.; Dutch; Ger., Hung., and Swiss (6 p. c. of ash), Hung. has also Kamala Depuratum; Port.; Russ. (3 p. c. of ash); Swed.; U.S. (8 p. c. of ash); not in the others.)

Medicinal Properties.—Purgative. Successfully given in tænia.

Dose.—30 to 120 grs. of the powder suspended in Gruel, Mucilage, Treacle, or Syrup, will of itself expel the worm. A purgative should, however, follow.

Not Official.

TINCTURA KAMALÆ.—Kamala, 1; Proof Spirit, 5; macerate seven days, and strain.

Dose.—1 to 2 drms.

Not Official.

KAOLIN.

Syn. CHINA CLAY; PORCELAIN CLAY.

A fine white clay, derived from the decomposition of the felspar of granitic rocks; extensive tracts of it occur in Cornwall. When finely ground and washed it is used as a form of Fuller's Earth for infants.

Has been used in Germany for many years as an excipient for pills of the easily reduced salts of metals, such as Chloride of Gold, Nitrate of Silver, and Permanganate of Potassium; also for clarifying Wine, Beer, and Syrups.

(Belg., Argilla; Austr., Dan., Ger., and Hung., Bolus Alba; not in the others; Swiss has Alumina.)

Preparation.

UNGUENTUM KAOLIN.

Soft Paraffin, 1; Hard Paraffin, 1; melt, and add Kaolin, 1; stir till cold.

This has been proposed as a basis for pills containing Nitrate of Silver or Permanganate of Potassium.—*P.J.* '84, xv. 60.

Not Official.

KAVA-KAVA.

The root of *Piper methysticum.*

Used by the inhabitants of the Polynesian Isles in the preparation of an intoxicating liquor.

An extract is used as a hypnotic, dose ⅓ gr. to 1 gr.—*L.* '87, i. 105.

Lewin has separated an oily green substance (a resin), soluble in Alcohol and Petroleum Spirit, having the characteristic smell of Kava. It produced a marked and prolonged insensibility of the mucous membrane of the mouth, also of the conjunctiva and cornea.—*L.* '86, i. 658; *P.J.* xvi. 918.

Not Official.

KERATINE.

A substance introduced by Dr. Unna for coating pills which are intended to pass the stomach and dissolve in the small intestine. It is made by digesting horn shavings, first in artificial gastric juice (acidified Pepsine solution) until all the albuminous substances have been dissolved, and the residue in Ammonia Solution. The Ammoniacal Solution, evaporated, yields a gum-like liquid, which can be used for coating pills. The coating although unaffected by Hydrochloric Acid is soluble to some extent in Acetic and Citric Acids, which should therefore not be given at the same time.—*P.J.* xv. 422.

KINO.

KINO.

The inspissated juice obtained by incisions made in the trunk of *Pterocarpus marsupium;* imported from the Malabar coast.

In small, angular, brittle, glistening, reddish-black fragments, translucent, and ruby-red on the edges, inodorous, astringent.

Solubility.—Of 100 grains Tellicherry Kino, only 88 grains are dissolved by cold Water, and 35 grains of Isinglass will precipitate the whole of the astringent matter from the solution. Compared with Pale Catechu it is more soluble in water, and the solution is more astringent.

Almost entirely soluble in Rectified Spirit. It yields little or nothing to Ether.

(Belg., Fr., Port., Russ., Span. (Quino), Swed., Swiss, and U.S.; not in the others.)

Medicinal Properties.—A powerful astringent. Employed in obstinate diarrhœa and pyrosis. Also used for intermittents, with Cinchona. Best given in diluted Alcohol. Externally, as a styptic, and in powder to indolent ulcers.

Dose.—10 to 30 grs.

Contained in Pulvis Catechu Compositus.

Incompatibles.—Mineral Acids, Alkalies and Carbonates, Metallic Salts and Gelatine.

Preparations.

PULVIS KINO COMPOSITUS. *Syn.* PULVIS KINO CUM OPIO.

Kino, in powder, 15; Opium, in powder, 1; Cinnamon, in powder, 4. =(1 Opium in 20).

Keep it in a well-closed vessel.

20 grains contain 1 grain of Opium, in powder.

Dose.—5 grs. and upwards, according to the quantity of Opium required.

(Not in the other Pharmacopœias.)

TINCTURA KINO.

Kino, in coarse powder, 2; Glycerine, 3; Distilled Water, 5; Rectified Spirit, 12: macerate seven days, with occasional agitation, filter, and add Rectified Spirit to make 20. =(1 in 10).

NOTE.—Glycerine and Water have been introduced in the place of some of the Spirit, after the manner of U.S.P. 1882.

Dose.—$\frac{1}{2}$ to 2 drms.

(U.S., 1 in 10; Fr., Russ., and Swiss, 1 and 5, by weight; not in the others.)

Not Official.

TROCHISCI KINO (*T.H.*).—Containing 2 grains in each lozenge, with Black Currant paste.

KOUSSO. *See* CUSSO.

KRAMERIÆ RADIX.

RHATANY ROOT.

The dried root of Peruvian Rhatany, *Krameria triandra*, or of Savanilla Rhatany, *Krameria Ixina*.

(Austr., Belg., Dan., Dutch, Fr., Ger., Norw., Swed., and Swiss, Ratanhia; Hung. and Russ., Ratanha; Port. and Span., Ratania; U.S., Krameria.)

Medicinal Properties.—A powerful astringent; tonic. Used in chronic diarrhœa, passive hæmorrhages and mucous discharges, as menorrhagia, leucorrhœa; and generally where Kino and Catechu are beneficial. The infusion is used as a **gargle** in relaxed sore throat. Locally in prolapsus ani or fistula ani.

Dose.—In powder, 20 to 60 grs.

Contained in Pulvis Catechu Compositus.

Incompatibles.—Alkalies, Lime Water, Salts of Iron and Lead, Gelatine.

Preparations.

EXTRACTUM KRAMERIÆ.

Macerate Rhatany Root, in No. 40 powder, 16, with cold Distilled Water, 30, twenty-four hours, then pack in a percolator and add more Distilled Water until 240 have been collected or the Rhatany is exhausted. Evaporate the liquor by a water bath to dryness.

Dose.—5 to 20 grs.

(Same as Austr., Belg., Dan., Dutch, Fr., Port., Russ., Span., Swed., and U.S.; Hung., crude extract purified with warm Water; Swiss, made with boiling Water; U.S. has also a fluid extract. Not in Ger. or Norw.)

INFUSUM KRAMERIÆ.

Rhatany Root, in No. 40 powder, 1; boiling Distilled Water, 20: infuse half an hour, and strain. =(1 in 20).

The time is reduced from one hour to half an hour.

Dose.—1 to 2 oz.

(Fr., Tisane, 1 in 50; not in the other Pharmacopœias.)

TINCTURA KRAMERIÆ.

Rhatany Root, in No. 40 powder, 1; Proof Spirit, 8: macerate forty-eight hours in 6 of the spirit, agitating occasionally; pack in a percolator; when it ceases to drop, pour on the remaining spirit, press the marc, filter, mix the liquids and add Proof Spirit to make 8.

=(1 in 8).

Dose.—$\frac{1}{2}$ to 2 drms.

(Austr., Belg., Dan., Dutch, Fr., Ger., Norw., Port., Russ., Swed., and Swiss, 1 and 5: Hung. and U.S., 1 in 5; all by weight. Not in Span.)

Excellent for the teeth and gums when either spongy or inflamed.

Not Official.

GOSSYPIUM KRAMERIÆ (*T.H.*)—Tincture of Rhatany, $\frac{1}{2}$ oz.; Glycerine, 10 mins.: mix and saturate evenly with it cotton-wool, 60 grs.

SUPPOSITORIUM KRAMERIÆ.—Extract of Rhatany, 8 grs.; Hydrochlorate of Morphine, $\frac{1}{10}$th gr.: Stearine, 10 grs.

(Fr. and Span., 1 gramme in each.)

TROCHISCI KRAMERIÆ (*T.H.*).—Containing 3 grs. of the Extract in each lozenge, with Red Currant paste.

(U.S., 1 grain in each.)

LAC.

Fresh milk from the Cow, *Bos taurus.*

Used only for preparing Mistura Scammonii.

A good report on the milk supply of London, with the analysis of forty samples, will be found in *M.T.* '70, i. 69.

Not Official.

ARTIFICIAL HUMAN MILK.—Allow $\frac{1}{3}$ of a pint of new milk (cow's) to stand for about twelve hours, remove the cream and add to it $\frac{2}{3}$ of a pint of new milk, as fresh from the cow as possible. Into the $\frac{1}{3}$ of a pint of blue milk left after abstraction of the cream, put a piece of rennet 1 inch square, set the vessel in warm water until the milk is fully curdled, which requires from five to fifteen minutes, the rennet being removed as soon as curdling commences, and put into an egg-cup for future use, as it can be employed daily for a month or two; break up the curd thoroughly, and separate the whole of the whey, which should be rapidly heated to boiling, when a little more casein separates, and may be removed by straining; 110 grs. of powdered milk-sugar is to be dissolved in this hot whey, and the sweetened fluid added to the $\frac{2}{3}$ of a pint of new milk, to which the cream from the other $\frac{1}{3}$ of a pint was added as already described.—*L.* '78, i. 390; and Frankland's "Experimental Researches."

LACTUCA.

LETTUCE.

The flowering herb of the wild indigenous plant, *Lactuca virosa.*

(Belg., Dutch, Fr. (Laitue vireuse), Port. (Alface virosa), Span. (Lachuga) (L. Sativa); not in the others.)

Medicinal Properties.—Sedative; said also to be gently laxative, diuretic, and somewhat diaphoretic. Employed in dropsy combined with Squill, Digitalis, or other diuretics.

Preparations.

EXTRACTUM LACTUCÆ.

The inspissated juice evaporated to a pilular consistence, according to the directions given for Extractum Belladonnæ.

100 lbs. of the plant yield 50 to 70 lbs. juice = 60 to 80 oz. of Extract.
Dose.—5 to 10 grs.

(Belg. and Swiss, with weak Spirit; Dutch, aqueous extract and alcoholic extract; Fr., purified expressed juice evaporated; Port., alcoholic; Span., expressed juice evaporated. Not in the others.)

The extract from the root is stronger than that made from the leaves.

Not Official.

EAU DISTILLEE DE LAITUE (Fr.).—From Lettuce flowers, 1 in 1.

SUCCUS LACTUCÆ.—The expressed juice, 3; Rectified Spirit, 1: mix.
Dose.—1 to 2 drms.

Not Official.

LACTUCARIUM.

The juice from the incised flower-stalk of *Lactuca virosa*, collected and dried.

(Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Port., Russ., Swed., Swiss, and U.S.; Belg., Fr., and Swed., use other species also; not in Norw., or Span.)

Dose.—2 to 6 grs.

Preparations.

SYRUPUS LACTUCARII.—Macerate Lactucarium 1, with Benzin 4, for twenty-four hours, decant the Benzin solution, dry the residue, mix it with an equal bulk of clean dry sand, and exhaust with Proof Spirit to 8; evaporate this Tincture to 6, add Water enough to regain the measure of 8, then dissolve in it Sugar 14, and add Water to make 20.

Dose.—30 to 120 minims.

TINCTURA LACTUCARII—Lactucarium, 1; Proof Spirit, 10: digest seven days, and filter.

Dose.—20 to 60 minims.

The preparations of Lettuce are highly prized by some practitioners for their sedative qualities, whilst others aver that they are almost inert.

Not Official.

LANOLIN.

Syn. Adeps Lanæ. Wool Fat.

The purified fat of sheep's wool, mixed with Water.

A yellowish white mass of the consistence of thick ointment, with a faint peculiar odour. Melts at 40° C. (104° F.).

Solubility.—Insoluble in Water, but capable of taking up several times its weight of Water without losing its ointment-like character. With Ether or Chloroform it gives a turbid neutral solution.

Tests.—Lanolin, when heated over a water-bath, should not lose more than 30 per cent. of its weight. Heated with Soda solution it should not give off Ammonia. One drop of Phenol-phthalein Solution added to 2 grammes of Lanolin, dissolved in 10 c.c. of Ether, should not show any change, but the solution should be strongly reddened upon the addition of one drop of normal Potash Solution.—*P.J.* xviii. 704.

(Austr.; not in the others.)

Medicinal Properties.—Has been introduced as a basis for ointments which is readily absorbed and which is stated not to become rancid.

Anhydrous Lanolin remains clear while in a melted condition, but upon cooling forms a honey-yellow viscous mass, which is readily soluble in Ether and Chloroform, but in Alcohol, or even hot absolute Alcohol, is only partially soluble.

LARICIS CORTEX.

LARCH BARK.

The bark of *Pinus larix;* collected in spring, deprived of its outer portion and dried.

The bark contains a volatile crystallisable acid, Larixinic Acid, which sublimes in vapour of water.

(Not in the other Pharmacopœias.)

Medicinal Properties.—Astringent, gently stimulant, useful in bronchitis with copious expectoration.

Preparation.

TINCTURA LARICIS.

Larch Bark, in No. 40 powder, 1; Rectified Spirit, 8: macerate forty-eight hours in 6 of the spirit, agitating occasionally; pack in a percolator, and when it ceases to drop, pour on the remaining spirit; press the marc, filter, mix the liquids, and add Rectified Spirit to make 8. =(1 in 8).

Dose.—20 to 30 minims.

Not Official.

TEREBINTHINA VENETA or **T. LARICIS.**—A viscid liquid of a yellowish or greenish-yellow colour, obtained from *Pinus larix* (*Larix Europæa*). It does not readily harden on exposure to air, or when mixed with $\frac{1}{16}$ of Magnesia. Soluble in Alcohol. It is much used on the Continent.

(Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Norw., Port., Russ., Span. (Trementina de Alerce), Swed., and Swiss; not in U.S.)

LAUROCERASI FOLIA.

CHERRY-LAUREL LEAVES.

The fresh leaves of *Prunus laurocerasus*, Common or Cherry Laurel.

(Belg., Dutch; Fr., Laurier Cerise; Port., Loureiro-Cerejeira; Span. and Swiss. Not in the others.)

Preparation.

AQUA LAUROCERASI.

Fresh leaves of Cherry-Laurel, 16; Water, 50: chop the leaves, crush them in a mortar, and put them with the Water into a retort: distil 20 of the liquid, shake the product, filter through paper, and adjust the strength of the finished product, either by addition of Hydrocyanic Acid or by diluting the distillate with Distilled Water, so that 810 grs. of it, tested as described in the process for Diluted Hydrocyanic Acid, shall require 150 grain-measures of the volumetric Solution of Nitrate of Silver to be added before a permanent precipitate begins to form, which corresponds to 0·1 per cent. of real Hydrocyanic Acid. Preserve in a stoppered bottle.

(Austr., Dutch, and Swiss, 1·0 HCN per 1000; Belg., ·5 per 1000; Fr., ·55—·7 per 1000; Span., ·833 per 1000; Port., Leaves, 1 in 2, not standardised; not in the others.)

Note.—To ascertain if it lost much of its strength by keeping, a sample was taken, which contained ·104 per cent., and placed in a pint bottle about three-quarters full for a month, it then gave ·094 per cent.; the bottle was then kept for a week with only 3 oz. in it, and then gave ·093 per cent.; the same was then kept three days with the cork out, and then gave ·038 per cent.

Notwithstanding the adoption of an official standard, the strength of this preparation is still very variable, commercial samples half the official strength being very common.

Medicinal Properties.—Sedative. Similar to Hydrocyanic Acid.

Dose.—20 minims to 2 drms. (20 minims = 1 minim Diluted Hydrocyanic Acid.)

Incompatibles.—Same as Hydrocyanic Acid.

Antidotes.—In case of overdose, the antidotes should be as directed under Acidum Hydrocyanicum.

LAVANDULÆ OLEUM.

OIL OF LAVENDER.

The oil distilled in Britain from the flowers of *Lavandula vera*.

Sp. gr. Samples of English oil examined were found ·884—·892; samples of foreign oil were ·881—·897.

Messrs. Schimmel state that genuine oil distilled by them had sp. g. ·895.

Solubility.—In all proportions of Rectified Spirit and Absolute Alcohol; sparingly soluble in Proof Spirit.

(Austr. and Dutch (sp. g. ·885—·895); Belg. (sp. g. ·872—·948); Dan., Fr.; Ger. (sp. g. ·875—·895); Hung. (sp. g. ·885—·900); Norw.; Port., Essencia de Alfazema (sp. g. ·875—·940); Russ. (sp. g. ·870—·900); Span., Esencia de Espliego; Swed., Swiss, U.S. (sp. g. ·890).)

Medicinal Properties.—An aromatic stimulant and carminative. Useful in hysteria, hypochondriasis, and other nervous affections, also in flatulence and colic. Rarely given in a crude state. Used as an adjuvant to other medicines.

Dose.—1 to 4 minims.

Contained in Linimentum Camphoræ Compositum.

Preparations.

SPIRITUS LAVANDULÆ.

Oil of Lavender, 1; Rectified Spirit, 49: dissolve. =(1 in 50).

Dose.—30 to 60 minims.

(Belg. and Dutch, 1 in 100; Norw., 2 in 100; Russ., 1 in 96; U.S., 3 in 100; all with the oil and by weight; Austr., Dan., Ger., Port., Swed., and Swiss, from the flowers; not in the others.)

TINCTURA LAVANDULÆ COMPOSITA. *Syn.* SP. LAVAND. COMP.

Oil of Lavender, 90 minims; Oil of Rosemary, 10 minims; Cinnamon Bark, bruised, 150 grs.; Nutmeg, bruised, 150 grs.; Red Sandal-wood, 300 grs.; Rectified Spirit, 40 oz.: macerate the Cinnamon, Nutmeg, and Red Sandal-wood in the spirit for seven days, then press out and strain; dissolve the Oils in the strained tincture, filter, and add sufficient Rectified Spirit to make 40 oz.

Or Spirit of Lavender, 30; Spirit of Rosemary, 3⅓; Cinnamon, 1; Nutmeg, 1; Red Sanders, 2; Rectified Spirit, to make 128.

Dose.—½ to 2 drms.

Used to colour Liq. Arsenicalis.

(Swed., similar to Brit.; U.S., similar to Brit. but stronger; Dan. (Tinct. Lavand. Rubr.) and Norw. differ considerably from Brit.; not in the others.)

LIMONIS CORTEX.

LEMON PEEL.

The outer part of the rind of the fresh fruit of *Citrus Limonum*.

(Austr., Belg., Fr. (Citron), Ger., Hung., Port. (Limao), Russ., Span., Swed., Swiss, and U.S.; not in Dan., Dutch, or Norw.)

Medicinal Properties.—An aromatic flavouring agent. Added to stomachic tinctures and infusions. Particularly applicable to dyspepsia.

Incompatibles.—Mineral Acids and Lime Water.

Contained in Inf. Aurant. Comp. and Inf. Gentian. Comp.

Preparations.

OLEUM LIMONIS.

A volatile oil obtained by mechanical means from fresh lemon peel. Sp. gr. ·85—·86. The samples we have taken were within this range.

Solubility.—In all proportions of Glacial Acetic Acid and Absolute Alcohol; 1 in 12 of Rectified Spirit.

Stimulant and carminative. Chiefly used, however, to impart flavour to other medicines. Externally, stimulant and rubefacient.

Its flavour and aroma suffer much from keeping; it keeps the aroma much better if mixed (when fresh) with 10 per cent. (by measure) of Absolute Alcohol. When this has been done by the seller, it can readily be detected by the diminution in volume of the Oil on shaking with Water.

The Oil should evaporate from paper without leaving a stain.

Dose.—1 to 4 minims.

(Austr. (sp. g. ·850); Belg. Essentia Citri, (sp. g. ·847—·868); Dan. and Swed., Aetheroleum Cedro; Dutch (sp. g. ·840—·855), Ger., Hung. (sp. g. ·840—·870), Russ. (sp. g. ·847), and Swiss, Oleum Citri; Fr., Huile volatile de Citron; Norw., Aetheroleum, Citri; Port., Essencia de Limao (sp. g. ·846—856); Span., Esencia de Limon; U.S., Oleum Limonis (sp. g. ·850).)

Contained in Lin. Potass. Iod. cum Sapone, and Spiritus Ammoniæ Aromaticus.

SYRUPUS LIMONIS.

Fresh Lemon Peel, 2; Lemon Juice, strained, 20; Refined Sugar, 36. Heat the lemon juice to the boiling point, and having put it into a covered vessel with the lemon peel, let them stand until they are cold, then filter and dissolve the sugar in the filtered liquid with a gentle heat. The product should weigh 56 and measure 41.

Sp. g. 1·340. =(2 Peel and 20 Juice in 41).

Dose.—1 to 2 drms.

(Austr., Syrupus Citri, fresh Lemon Juice filtered 10, Sugar 16; U.S., fresh Lemon Juice strained 40, fresh Lemon Peel 2, Sugar 60; Port., Xarope de Casca de Limao, fresh Lemon Peel 1, Boiling Water 35, Sugar 65; Span., Jarabe de Limon, Lemon Juice 5, Sugar 9. For other Pharmacopœias see Acidum Citricum.)

TINCTURA LIMONIS.

Fresh Lemon Peel, cut small, 1; Proof Spirit, 8: macerate for seven days in a closed vessel with occasional agitation, strain, press, filter, and make up (if necessary) with Proof Spirit to 8. =(1 in 8).

Dose.—½ to 2 drms.

(Fr. Alcoolature de Citron, 1 fresh Peel to 2 of Alcohol; and Teinture d'essence de Citron, 1 Oil in 50; Belg. Spiritus Citri, 1 Oil in 100; Dutch, Spiritus Citri, 1 Oil in 100; Span., Alcohol de Corteza de Limon, Peel 1, and Alcohol (80 p.c.) 6, distil; U.S., Spiritus Limonis and Oil of Lemon 6, Lemon Peel 4, Alcohol (94 p.c.) to make 100. Not in the others.)

LIMONIS SUCCUS.

LEMON JUICE.

The freshly expressed juice of the ripe fruit of *Citrus Limonum.*

To preserve the juice it may be heated to 150° F., filtered, and set aside in bottles completely filled. If this process be performed during the winter, it is said that the juice may be kept perfectly good for twelve months. Mr. Schweitzer states that if one-tenth part of Alcohol be added to Fresh Lemon Juice, it prevents decomposition, and the juice is rendered fit for exportation.

Sp. g. 1·035—1·045.

Quantity of Citric Acid in a fluid ounce is 36 to 46 grs.

The neutralizing quantities for effervescing mixtures are given under Acidum Citricum, p. 16.

(Fr.; Span., Zumo de Limon; U.S., 7 p.c. of Citric Acid, ·5 p.c. of ash; Swiss, Succus Citri Artificialis, Citric Acid 7 grms., Water 93 grms., Oil of Lemon 1 drop.)

Medicinal Properties.—Refrigerant; when diluted, a useful beverage in scurvy and in febrile and inflammatory affections.

In acute Rheumatism, ½ to 1 pint daily. Combined with Opium and Cinchona.

Dose.—½ to 2 oz.

Contained in Syrupus Limonis.

Preparation.

ACIDUM CITRICUM.—*See* ACIDUM CITRICUM.

LINIMENTA.

LINIMENTS.

This group has received some valuable additions in the British Pharmacopœia. The Pharmacopœia Committee, in order to guard against mistakes, have called *strong Tinctures* that are employed for external use by the name of *Liniments*, so that all the Tinctures may now be considered for *internal* use.

The following are the Liniments of the British Pharmacopœia, the formulas of which will be found under the names of the substances from which they are prepared :—

		Proportion of the active ingredient to the whole.
LINIMENTUM ACONITI		1 in 1½.
LINIMENTUM AMMONIÆ	Solution of Ammonia.	1 in 4.
LINIMENTUM BELLADONNÆ		1 in 1½.
LINIMENTUM CALCIS	Solution of Lime.	1 in 2.
LINIMENTUM CAMPHORÆ		1 in 5.
LINIMENTUM CAMPHORÆ COMP.	Strong Ammonia.	1 in 4½.
LINIMENTUM CHLOROFORMI		1 in 2.
LINIMENTUM CROTONIS		1 in 8.
LINIMENTUM HYDRARGYRI	Mercury	1 in 6.
LINIMENTUM IODI	Iodine about	1 in 9.
LINIMENTUM OPII	Tinct. Opii	1 in 2.
LINIMENTUM POTASSII IODIDI CUM SAPONE	about	1 in 9.
LINIMENTUM SAPONIS		1 in 10.
LINIMENTUM SINAPIS COMP.	Oil of Mustard	1 in 40.
LINIMENTUM TEREBINTHINÆ		1 in 1¼.
LINIMENTUM TEREBINTHINÆ ACETICUM		1 in 2¼.

LINI FARINA.

LINSEED MEAL.

The dried ripe seeds of *Linum usitatissimum* reduced to coarse powder.

Used in the preparation of the cataplasms of the Pharmacopœia, except Cataplasma Fermenti.

Lini Farina of former Pharmacopœias was the cake of Linseed, from which the oil had been pressed, reduced to powder; but B. P. 1885 applies the term to what has been known as "crushed Linseed."

As there is a difference of opinion in the medical profession as to which of these is the best for making a poultice, it is unfortunate that the old term is now applied to something different. Both kinds might have been official under different names.

(Belg. and Fr. should contain 30 per cent. of oil; Port; U.S. 25 per cent. of oil; not in the others.)

Preparation.

CATAPLASMA LINI.

Linseed Meal, 4; boiling Water, 10: mix the linseed meal with the water gradually, with constant stirring.

Now made with Linseed Meal (containing the oil) in place of the old Meal (without its oil) and olive oil. The bruised seeds, if fresh, are preferred to the meal. Applied to inflamed and suppurating parts.

(Belg., Fr., Port., and Span.; not in the others.)

LINI SEMINA.

LINSEED.

Syn. FLAX SEED.

The dried ripe seeds of *Linum usitatissimum.*

The envelope or testa abounds in a peculiar gummy matter or mucilage, readily imparted to hot water.

A decoction of Linseed when cold does not become blue on the addition of Solution of Iodine.

Samples of Pulvis Lini (without oil) frequently show the presence of starch by this test.

(Austr., Belg., Dan., Dutch, Fr. (Lin), Ger., Hung., Norw., Port. (Linho), Russ., Span. (Lino), Swed., Swiss, and U.S.)

Medicinal Properties.—Demulcent and emollient. Employed in catarrh, dysentery, nephritic and calculous complaints, and inflammatory affections of the mucous membranes and urinary passages.

Preparations.

INFUSUM LINI.

Linseed, 150 grs.; dried Liquorice Root, in No. 20 powder, 50 grs.; boiling Distilled Water, 10 oz.: infuse two hours, and strain.

=(about 1 in 30).

The quantity of Linseed is reduced from 160 to 150 grs., and dried Liquorice Root ordered in the place of the fresh.

(Fr. Linseed 1, boiling Water 100; Swed., twice the strength of Brit.; not in the others.)

Incompatibles.—Preparations of Lead and Iron, and most metallic salts.

OLEUM LINI.

The Oil expressed in Britain from Linseed without heat.

Sp. g. about ·935; does not congeal above —0·4° F. (—18° C.).

Solubility.—Of a freshly expressed sample, 1 in 40 of Absolute Alcohol; 1 in 1¼ of Ether.

(Belg. sp. g. ·930; Dan.; Dutch and Russ., ·930—·940; Fr.; Ger. and Hung. (sp. g. ·936—·940); Hung. also Oleum Lini Lotum; Norw.; Port., Oleo de Linhaça (sp. g. ·930); Span., Aceite de Linaza; Swed.; Swiss; U.S. (sp. g. ·936); not in Austr.)

As an **enema** a pint of Linseed Oil thrown up removes impacted fæces with less pain and spasm than gruel or other aqueous enemata.

Linseed Oil, when issuing from the seed whilst pressing, has scarcely any of the odour or taste of the Linseed Oil of the shops, but is acquired in a very short time by exposure to the air. For medicinal purposes it should be procured as fresh as possible.

Boiled Linseed Oil is used in the Arts as a drying oil, and for certain purposes Litharge is added during the boiling. The *boiled* oil may, therefore, contain Lead.

Not Official.

CARRON OIL.—Equal parts of Linseed Oil and Lime Water, shaken to form a cream.

One of the best applications to burns or scalds.

LIQUORES.

SOLUTIONS.

The following are the Solutions of the British Pharmacopœia, the formulas of which will be found under the names of the substances from which they are prepared :—

	Proportions of active ingredient to the whole.	
LIQUOR ACIDI CHROMICI	Chromic Acid.	1 in 3½
LIQUOR AMMONIÆ	Liquor Fort.	1 in 3.
LIQUOR AMMONIÆ FORTIOR	Ammonia.	1 in 3.
LIQUOR AMMONII ACETATIS	Liquor Fort.	1 in 5.
LIQUOR AMMONII ACETATIS FORTIOR	Ammon. Acet.	1 in 2·8
LIQUOR AMMONII CITRATIS	Liquor Fort.	1 in 4.
LIQUOR AMMONII CITRATIS FORTIOR	Ammon. Cit.	1 in 1·74
LIQUOR ANTIMONII CHLORIDI	Antim. Chlor.	1 in 1·8
LIQUOR ARSENICALIS	Arsenious Acid.	1 in 100.
LIQUOR ARSENICI HYDROCHLORICUS	Arsenious Acid.	1 in 100.
LIQUOR ARSENII ET HYDRARGYRI IODIDI	Arsenious Iodide.	1 in 100.
LIQUOR ATROPINÆ SULPHATIS	Atrop. Sulph.	1 in 100.
LIQUOR BISMUTHI ET AMMON. CITRAT	Bism. Cit.	1 in 10.
LIQUOR CALCII CHLORIDI	Calc. Chlor. Anhyd.	1 in 5⅓.
LIQUOR CALCIS	Lime.	5 gr. in 10 ozs.
LIQUOR CALCIS CHLORINATÆ	Calx. Chlorinat.	1 in 10.
LIQUOR CALCIS SACCHARATUS	Lime.	1 in 65.
LIQUOR CHLORI	Chlorine.	1 in 167.
LIQUOR EPISPASTICUS	Cantharides.	1 in 4.
LIQUOR FERRI ACETATIS	Liquor Fort.	1 in 4.
LIQUOR FERRI ACETATIS FORTIOR	Ferric Oxide.	1 in 9·4.
LIQUOR FERRI DIALYSATUS	Ferric Oxide.	1 in 20.
LIQUOR FERRI PERCHLORIDI	Liquor Fort.	1 in 4.
LIQUOR FERRI PERCHLORIDI FORTIOR	Ferric Oxide.	1 in 3·5.
LIQUOR FERRI PERNITRATIS	Ferric Oxide.	1 in 20·8.
LIQUOR FERRI PERSULPHATIS	Ferric Oxide.	1 in 4·7.
LIQUOR GUTTA PERCHA	Gutta Percha.	1 in 8.
LIQUOR HYDRARGYRI NITRATIS ACIDUS	Mercury.	1 in 1·5.
LIQUOR HYDRARGYRI PERCHLORIDI	Hyd. Perchlor.	1 in 875.
LIQUOR IODI	Iodine.	1 in 20.
LIQUOR LITHIÆ EFFERVESCENS	Lithia Carb.	5 grs. in 10 oz.
LIQUOR MAGNESII CARBONATIS	Mag. Carb.	10 grs. in 1 oz.
LIQUOR MAGNESII CITRATIS	Mag. Carb.	10 grs. in 1 oz.

LIQUOR MORPHINÆ ACETATIS	Morph. Acet.	1 in 100.
LIQUOR MORPHINÆ BIMECONATIS	Morph. Bimec.	1 in 80.
LIQUOR MORPHINÆ HYDROCHLORATIS	Morph. Hydro.	1 in 100.
LIQUOR PLUMBI SUBACETATIS	Plumbi Subacet.	1 in 4.
LIQUOR PLUMBI SUBACETATIS DILUTUS	Liquor.	1 in 80.
LIQUOR POTASSÆ	Hydrate of Potash.	1 in 17.
LIQUOR POTASSÆ EFFERVESCENS	Pot. Bicarb.	15 grs. in 10 oz.
LIQUOR POTASSII PERMANGANATIS	Pot. Permang.	1 in 100.
LIQUOR SODÆ	Hydrate of Soda.	1 in 25.
LIQUOR SODÆ CHLORINATÆ	Chlorine.	1 in 40.
LIQUOR SODÆ EFFERVESCENS	Soda Bicarb.	15 grs. in 10 oz.
LIQUOR SODII ARSENIATIS	Sod. Arsen. Anhyd.	1 in 100.
LIQUOR SODII ETHYLATIS	Sodium.	1 in 20.
LIQUOR STRYCHNINÆ HYDROCHLORATIS	Strychnine.	1 in 100.
LIQUOR ZINCI CHLORIDI	Zinci Chlorid.	1 in 12.

Liquors not official will be found in the Index.

Not Official.

LITHIUM.

LITHIUM.

L, eq. 7.

A silver-white, brilliant, ductile metal, having the density of 0·59, being therefore the lightest metal known, if not the lightest known solid.

Its oxide was introduced into medicinal use by Dr. Garrod. It was discovered in 1817, by Arfvedson. It is obtained from several minerals,—Petalite, Lepidolite, Triphane, and formerly Triphylline.

The symbol L is used in the B. P., but it is more commonly written Li.

The Carbonate and Citrate are the official preparations.

Not Official.

LITHII BENZOAS.

BENZOATE OF LITHIUM.

L $C_7H_5O_2$, eq. 128.

A white powder or small shining scales, with a faintly acid reaction; the taste is sweet and somewhat saline.

It can be prepared by boiling in Water, 9 of Carbonate of Lithium with 3¼ of Benzoic Acid, and evaporating.

Solubility.—1 in 2½ of Water; 1 in 15 of Rectified Spirit.

(Fr., Russ., and U.S.; not in the others.)

Medicinal Properties.—A remedy for gout.

Dose.—15 to 30 grs.

Not Official.

LITHII BROMIDUM.

L Br, eq. 87.

A white granular deliquescent salt.

Solubility.—1 in 1 of Water; 1 in 4 of Rectified Spirit.

(Fr. and U.S.; not in the others.)

Medicinal Properties.—Owing to the low atomic weight of Lithium, this salt contains more Bromide than the Bromides of Potassium or Sodium, and consequently has been recommended as a hypnotic for gouty patients.—*M.P.* '88, i. 606.

Has been used in epilepsy.

LITHII CARBONAS.

CARBONATE OF LITHIUM.

L_2CO_3, eq. 74.

In white powder or in minute crystalline grains.

Solubility.—1 in 100 of cold Water. Insoluble in Alcohol.

Tests.—It dissolves in Hydrochloric Acid; this solution, evaporated to dryness, leaves a residue, which should be entirely soluble in a mixture of equal parts absolute Alcohol and pure Ether (absence of alkalies), and which imparts to the flame of a spirit lamp a red colour. 10 grains of the Salt neutralized with Sulphuric Acid, and afterwards heated to redness, leave 14·86 grains of dry Sulphate of Lithium, which, when redissolved in Distilled Water, yield no precipitate with Oxalate of Ammonium or Solution of Lime—indicating absence of Lime, Magnesia, and Alumina.

(Austr., Belg., Dutch, Fr., Ger., Hung., Port., Russ., Span., Swed., Swiss, and U.S.; not in Dan., or Norw.)

Medicinal Properties.—Lithium, combined with Carbonic Acid, given in a diluted solution, as in Lithia Water, acts as a powerful diuretic, probably more so than the corresponding Salts of Potassium or Sodium. In certain states of the system in which Urate of Sodium is liable to be deposited in the tissues, leading to the production of gouty inflammation, the administration of Lithium Salts is attended with advantage, probably by aiding elimination, and likewise by assisting the solution of the urate in the animal fluids. Urate of Lithium is very soluble; Lithium salts are therefore most useful when Uric Acid abounds in the urine. Externally as a **lotion**, 5 grains in an ounce of Water, to gouty inflamed parts.

1 grain of Carbonate of Lithium and 1 grain Arseniate of Sodium given in aërated Water has been recommended by Martineau in the treatment of diabetes.—*L.* '87, i. 650.

Dose.—3 to 6 grs. in 3 or 4 oz. of aërated water.

LIQUOR LITHIÆ EFFERVESCENS.

10 oz. contain 5 grs. Carbonate of Lithium.

Dose.—5 to 10 oz.

LITHII CITRAS.

CITRATE OF LITHIUM.

$L_3C_6H_5O_7$, $4H_2O$, eq. 282.

A white crystalline salt, made by dissolving 50 grains of Carbonate of Lithium in 1 oz. of Water with 90 grains of Citric Acid, then concentrating for crystals to form.

The theoretical quantity of Citric Acid is 94·6. The Salt when pure is not deliquescent.

Solubility.—1 in 2 of Water, this is variously given as 1 in 5 to 1 in 25; almost insoluble in Rectified Spirit.

Tests.—Heated to redness it blackens, evolving inflammable gases; and the residue neutralized by Hydrochloric Acid yields with Rectified Spirit a solution which burns with a crimson flame. 20 grains of the Salt dried at 212° F. (100° C.) lose about 3·8 grains, at 240° F. (115·5° C.) an additional 1·3 grain, and burned at a low red heat, with free access of air, then drenched with Solution of Carbonate of Ammonium and gently re-ignited, leave 7·8 grains of a white residue (Carbonate of Lithium).

(Fr. and U.S.; not in the other Pharmacopœias.)

Medicinal Properties.—Similar to those of the Carbonate, but the Citrate being more soluble, it is better adapted for fluid administration.

Dose.—5 to 10 grs.

Not Official.

LITHII GUAIACAS.

Is prepared by digesting pure Guaiacum Resin in an aqueous solution of Lithia, decanting the clear solution, evaporating and scaling it.

Composed of Lithia, 1; Guaiacum Resin, 3.

This salt, introduced by Dr. Garrod, is given for chronic gout and some forms of rheumatism.

Dose.—5 grs. twice a day.

The Author is indebted to Mr. Sandford for this information.

Not Official.

LITHII SALICYLAS.

A deliquescent white powder with a faintly acid reaction.

Solubility.—4 in 3 of Water; 1 in 2 of Rectified Spirit.

Tests.—Its aqueous solution should be colourless, and not effervesce on the addition of an acid (absence of Carbonate). When agitated with 15 parts of concentrated Sulphuric Acid, the salt should not impart any colour to the acid in fifteen minutes (absence of foreign organic matters).

(Fr. and U.S.; not in the others.)

Medicinal Properties.—A remedy for gout and rheumatism.

Is much better than Salicylate of Sodium in chronic articular rheumatism. *B.M.J.* '86, i. 38; '87, i. 695.

Dose.—20 to 40 grs.

LOBELIA.

LOBELIA.

The herb *Lobelia inflata* in flower, dried; imported from North America.

It contains an alkaloid, "Lobeline," a volatile oil, a fixed oil, and a stearoptene called "Inflatine"; the alkaloid is a powerful emetic. In the Tincture or an aqueous solution, the alkaloid is destroyed by heat. When evaporation is required the solution must be acidified.—*P.J.* xvii. 686, 1037; also xviii. 135.

(Austr., Belg., Dutch, Fr., Ger., Hung., Norw., Port., Swed., and U.S.; not in the others.)

Medicinal Properties.—In small doses it is antispasmodic, diaphoretic, and expectorant. More freely used, it is cathartic and emetic; but as an emetic it is too distressing as well as too hazardous for general use, as it has a powerful effect on the respiration, and may cause death.

It is chiefly used in spasmodic asthma, also in catarrh and other laryngeal and pectoral affections, severe croup, and for the paroxysmal dyspnœa of chronic bronchitis. In some cases a useful adjunct to diuretics.

Antidotes.—In case of poisoning by Lobelia, the most active stimulants, internal as well as external, should be employed. Tannic Acid, Gallic Acid or strong tea frequently repeated, warmth to the surface, recumbent position important.

Preparations.

TINCTURA LOBELIÆ.

Lobelia, in No. 40 powder, 1; Proof Spirit, 8: macerate forty-eight hours with 6 of the spirit, agitating occasionally, pack in a percolator, and let it drain, pour on the remaining spirit, and when it ceases to drop, press the marc, filter, and add Proof Spirit to make 8.

=(1 in 8).

Dose.—(Pharm. Brit.) 10 to 30 minims; but 1 drm. may be given for dyspnœa.

(Austr., 1 in 10; Belg., Fr., Port., and Swiss, 1 and 5; Hung. and U.S., 1 in 5; Dan., Dutch, Ger., Norw., Russ., and Swed., 1 and 10; all by weight; not in Span.)

TINCTURA LOBELIÆ ÆTHEREA.

Lobelia, in coarse powder, 1; Spirit of Ether, 8: macerate seven days, press, filter, and add sufficient Spirit of Ether to make 8.

=(1 in 8).

Dose.—10 to 30 minims as an antispasmodic.

(Not in the other Pharmacopœias.)

LUPULINUM.

LUPULIN.

Syn. GLANDULÆ LUPULI.

A glandular brownish-yellow resinous powder, obtained from the dried strobiles of *Humulus Lupulus*.

Tests.—Not more than 30 or 40 per cent. should be insoluble in Ether. On incineration it should not leave more than 15 per cent. of ash. (*Brit. Pharm.*) Should not leave more than 8 per cent. of ash. (*U.S.*) Under 10 per cent. (Ger. and Hung.)

The ash was determined of eight samples, and gave 28·2, 33·8, 29·9, 27·9, 20·6, 12·1, 18·7, 25·4 per cent.

(Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Norw., Port., Russ., Span., Swed., Swiss, and U.S.)

Medicinal Properties.—Aromatic, tonic, sedative, and anaphrodisiac. It allays irritability of the bladder.

Dose.—2 to 5 grs.

Not Official.

EXTRACTUM LUPULINI.—Exhaust Lupulin with Rectified Spirit, and evaporate the strained liquor to a proper consistence. The extract produced is about half the original weight of the Lupulin employed.

Dose.—3 to 6 grs.

OLEORESINA LUPULINI (U.S.).—Exhaust Lupulin with Stronger Ether; distil and evaporate the Ether on a water bath.

Dose.—2 to 5 grs.

TINCTURA LUPULINI.—Lupulin, 1; Rectified Spirit, 6; macerate till exhausted, pour on a filter, and when drained wash with Rectified Spirit to make 8.

Dose.—½ to 2 drms.

LUPULUS.

HOP.

Syn. FRUCTUS LUPULI. STROBILI LUPULI.

The dried strobiles of *Humulus Lupulus,* from plants cultivated in England.

The ethereal extract obtained from Hops varies from 9 to 15 p.c., and consists of oil, resin, and bitter principle.

(Belg., Fr. (Houblon), Norw., Port., Russ., Span., Swed., Swiss, and U.S.; not in the others.)

Medicinal Properties.—Tonic, stomachic, sedative, and moderately narcotic. It allays irritation of the genito-urinary organs. Has been recommended in the treatment of alcoholism. It sometimes produces sleep when opiates are objectionable. Hops may be used topically as fomentation or poultice, as a resolvent or discutient in painful swellings and tumours. Very freshly dried Hops are made into a pillow, to induce sleep.

Incompatibles.—Mineral acids, metallic salts.

Preparations.

EXTRACTUM LUPULI.

Hop, 8; Rectified Spirit, 15; Distilled Water, 80: macerate the hop in the spirit for seven days, press out the tincture, filter, and distil off the spirit, leaving a soft extract; boil the residual hop with the water for one hour, then press out the liquor, strain, and evaporate by a water bath to the consistence of a soft extract; mix the two extracts, and evaporate, at a temperature not exceeding 140° F. (60° C.), to a pilular consistence.

1 lb. Hop yields 4 oz. Extract.

Dose.—5 to 10 grains.

(Belg., Fr., Port., Russ., and Span., have alcoholic Extracts, but not made the same way as Brit.; U.S. has a fluid Extract from Lupulin; not in the others.)

INFUSUM LUPULI.

Hop, 1; boiling Distilled Water, 20: infuse one hour, and strain.

The time is reduced from two hours to one hour. =(1 in 20).

Dose.—1 to 2 oz.

(Fr., 1 in 100; not in the other Pharmacopœias.)

TINCTURA LUPULI.

Hop, 1; Proof Spirit, 8: macerate forty-eight hours in 6 of the spirit, agitating occasionally, pack in a percolator, let it drain, add to it the remaining spirit, and when the fluid ceases to drop, press, filter, and add Proof Spirit to make 8. =(1 in 8).

Dose.—$\frac{1}{2}$ to 2 drms.

(Belg., Swed., and U.S. 1 in 5; not in the other Pharmacopœias.)

Not Official.

MAGNESIUM.

MAGNESIUM.

Mg, eq. 24.

Magnesium, the metallic base of Magnesian Salts, does not exist native. It may be obtained artificially. When set on fire it produces a powerful actinic light, and is used by photographers on this account.

It is a brilliant grey metal, sp. g. 1·750, slightly resembling Silver, malleable, fusible at a low temperature, and convertible into Magnesia by the combined action of air and moisture.

Sulphate of Magnesium was first artificially obtained in England by Dr. Crew in 1675, by evaporation from the water of Epsom spring (whence the name of Epsom Salts). The chief source of the Magnesia now sold is Magnesian Limestone, Double Carbonate of Magnesium and Calcium, called Dolomite, and is obtained by a process discovered by Dr. Henry, of Manchester. Magnesia was first chemically distinguished from Lime by Dr. Black, in 1755, who also showed the difference between Magnesia and its carbonate. From the mode of procuring it, it is frequently termed Calcined Magnesia.

There are two kinds of Magnesia admitted into the Pharmacopœia, the heavy and the light. The former is that which is commonly used in pharmacy, it being smoother, more readily miscible with water, and more compact. It is probably from these causes that it is preferred in medicine, and in the Pharmacopœia it is clearly meant to be used, unless the light is expressly ordered.

The forms in which Magnesia is used are:—Magnesia Levis, Magnesia Ponderosa, Magnesii Carbonas Levis, Magnesii Carbonas Ponderosa, and Magnesii Sulphas.

MAGNESIA LEVIS.

LIGHT MAGNESIA.

MgO. eq. 40.

Light Carbonate of Magnesium, heated in a Cornish crucible until all the Carbonic Acid is driven off, and it ceases to effervesce when added to warm diluted Sulphuric Acid.

A bulky white powder, differing from Magnesia Ponderosa (heavy Magnesia) only in its great levity, the volumes corresponding to the same weight being in the ratio of 3½ to 1.

Test.—Does not effervesce with Acids.

(Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Norw., Port., Russ., Span. Swed., Swiss, and U.S.)

Dose.—10 to 20 grs. as an antacid; 20 to 60 grs. as a purgative.

Contained in Pulvis Rhei Comp.

MAGNESIA PONDEROSA.

HEAVY MAGNESIA.

MgO, eq. 40.

Heavy Carbonate of Magnesium, heated in a Cornish crucible until all the Carbonic Acid is driven off, and it ceases to cause effervescence with warm diluted Sulphuric Acid.

It is a white powder, scarcely soluble in water, but readily dissolved by Acids without effervescence.

Solubility.—1 in 5,412 of cold Water, 1 in 36,000 of hot Water; like Lime, it is more soluble in cold than in hot water.

Tests.—Its solution in Hydrochloric Acid, when neutralized by a mixed solution of Ammonia and Chloride of Ammonium, gives a copious crystalline precipitate when Phosphate of Sodium is added to it. Dissolved in Nitric Acid and neutralized with a mixture of

Ammonia and Chloride of Ammonium, it does not give any precipitate with Oxalate of Ammonium or Chloride of Barium—indicating absence of Lime and Sulphates.

(Dan., Norw., and Swed., Oxydum Magnesicum ponderosum; U.S.; not in the others.)

Medicinal Properties.—Antacid, alterative, laxative, and antilithic. Much used in dyspepsia, heart-burn, sick headache, gout, and other complaints attended with acidity, and constipation. It is preferable as an antacid to Bicarbonate of Sodium. As a laxative, it may often be used with advantage when other medicines occasion nausea; generally combined with other purgatives. It is an excellent and mild purgative for children.

It frequently becomes aggregated into a solid mass when prescribed in mixtures, especially when prescribed with the sulphate.

Dose.—10 to 20 grs. as an antacid and alterative, 20 to 60 grs. as a purgative.

Although the heavy powder is preferred by many for its smoothness, the light powder is said to be quicker in its action.

Incompatibles.—All acids.

MAGNESII CARBONAS LEVIS.

LIGHT CARBONATE OF MAGNESIUM.

$(MgCO_3)_3\ Mg(HO)_2,\ 4H_2O$, eq. 382.

A very light powder, precipitated cold from a diluted Solution of Sulphate of Magnesium by Carbonate of Sodium, the precipitate being washed in boiling water until the washings do not precipitate with Chloride of Barium, is then dried at 212° F. (100° C.). When examined under the microscope, it is found to be partly amorphous, with numerous slender prisms intermixed. In other respects it is similar to Magnesii Carbonas Ponderosa.

Solubility.—1 in 2,493 of cold Water, 1 in 9,000 of hot Water.

(Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Norw., Port., Russ., Span., Swed., Swiss, and U.S.)

Dose.—10 to 20 grs. as an antacid; 30 to 60 grs. as a purgative.

Used in the preparation of Vapor Olei Pini Sylvestris.

MAGNESII CARBONAS PONDEROSA.

HEAVY CARBONATE OF MAGNESIUM.

$(MgCO_3)_3,\ Mg(HO)_2,\ 4H_2O$, eq. 382.

A white powder, precipitated from a boiling concentrated solution of Sulphate of Magnesium by a solution of Carbonate of Sodium, the whole evaporated to dryness, and the dry residue digested in water and collected on a filter and washed, so that the Sulphate of Sodium is entirely washed out; it is then dried at 212° F. (100° C.).

Tests.—With excess of Hydrochloric Acid it forms a clear solution, in which Chloride of Barium causes no precipitate—indicating absence of Sulphuric Acid. Another portion of the solution, supersaturated with Ammonia, when filtered, gives no immediate precipitate with Oxalic Acid—indicating absence of Lime. 50 grains calcined at a red heat are reduced to 22.

Commercial samples sometimes contain a considerable proportion of Chlorine. (Not in the other Pharmacopœias.)

Medicinal Properties.—Same as those given under Magnesia Ponderosa.

Dose.—10 to 20 grs. as an antacid; 30 to 60 grs. as a purgative.

Contained in Trochisci Bismuthi.

Preparation.

LIQUOR MAGNESII CARBONATIS. *Syn.* FLUID MAGNESIA.

Is prepared by impregnating water with Carbonic Acid under pressure in which freshly precipitated Carbonate of Magnesium is suspended.

Each fluid ounce contains 10 grains of Carbonate of Magnesium.

The strength has been reduced from 13 to 10 grs. in 1 oz.

Tests.—It is clear and free from any bitter taste. 1 fl. oz. evaporated to dryness gives a residue which after being calcined weighs about 4 grs.

Dose.—1 to 2 oz.

(Belg., Aqua Magnesiæ Aerata; Fr., Eau Magnésienne; not in the others.)

Not Official.

MISTURA ALBA.—Carbonate of Magnesia, 10 grs.; Sulphate of Magnesia, 1 drm.; Peppermint Water, to 1 oz.—*King's College Hospital.*

MISTURA MAGNESIÆ C. RHEO.—Rhubarb, 7½ grs.; Carbonate of Magnesia, 15 grs.; Peppermint Water, 1 oz.—*St. Thomas's Hospital.*

LIQUOR MAGNESII BROMIDI.—Neutralise 20 ozs. of Dilute Hydrobromic Acid (10 p. c.) with about 1 oz. of Carbonate of Magnesium: filter. Each teaspoonful contains nearly 7 grs. of Anhydrous Bromide of Magnesium.

Dose.—1 to 2 fluid drachms.

Has been used as a sedative in treatment of the insane.—*A.J.P.* '86, 531.

MAGNESII CITRATIS LIQUOR.

SOLUTION OF CITRATE OF MAGNESIUM.

Syn. LIMONADE PURGATIVE.

Carbonate of Magnesium, 100 grs.; Citric Acid, 200 grs.; Syrup of Lemons, ½ oz.; Bicarbonate of Potassium, in crystals, 40 grs.; Water, a sufficiency.

Dissolve the Citric Acid in two ounces of the water, and having added the Carbonate of Magnesium, stir until it is dissolved. Filter the solution into a strong half-pint bottle, add the Syrup and sufficient water to nearly fill the bottle, then introduce the Bicarbonate of Potassium, and immediately close the bottle with a cork, which should be secured with string or wire; afterwards shake the bottle until the Bicarbonate of Potassium is dissolved.

(The U.S. formula modified. Austr., Hung., and Russ., Potio Magnesiæ Citricæ Effervescens; Belg., Limonada Citratis Magnesiæ; Fr., Limonade Purgative; Port., Limonada Citro-Magnesica; Span., Pocion de Citrato Magnesico Gaseosa; Swiss, Magnesium Citricum Liquidum; not in the others.)

Medicinal Properties.—A pleasant aperient and refrigerant draught.

Dose.—5 to 10 oz.

MAGNESII SULPHAS.

SULPHATE OF MAGNESIUM. EPSOM SALT.

$MgSO_4 . 7H_2O$, eq. 246.

In minute, colourless, transparent, rhombic prisms, possessing a bitter taste.

Solubility.—10 in 13 of Water, measures 18; 20 in 3 of boiling Water.

Tests.—The aqueous solution gives copious white precipitates with Chloride of Barium (Sulphate), and with a mixed solution of Ammonia, Chloride of Ammonium and Phosphate of Sodium (Ammonio-Magnesian Phosphate); at ordinary temperatures it is not precipitated by Oxalate of Ammonium—indicating absence of Lime, nor does it give a brown precipitate with Chlorinated Lime or Soda—indicating absence of Iron. The precipitate given by Carbonate of Sodium, when obtained from a boiling solution of 100 grains of the salt, should, when well washed, dried, and heated to redness, weigh 16·26 grains.

(Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Norw., Port., Russ., Span., Swed., Swiss, and U.S.)

Medicinal Properties.—A mild and safe cathartic, operating with little pain or nausea. Used in colic and obstinate constipation, and in most cases where a cathartic is required which shall not cause debility or irritation of the stomach.

Stimulates the intestinal glands, but not the liver.—Dr. Rutherford.

Dose.—1 to 4 drms.

Contained in Mistura Sennæ Comp. 1 in 5.

Incompatibles.—Carbonates of Potassium and Sodium (not the Bicarbonates), Lime Water, Acetate of Lead.

Sulphate of Magnesium should not be prescribed with Tartarated Soda, for although the solutions of these two salts are transparent when first mixed, yet after some time Tartrate of Magnesium will precipitate. The following prescription will illustrate this:—

℞ Sodæ Tartaratæ, ʒj; Magnes. Sulph., ʒij; Aquæ ad ℥iss.

Preparation.

ENEMA MAGNESII SULPHATIS.

Sulphate of Magnesium, 1 oz.; Olive Oil, 1 oz.; Mucilage of Starch, 15 oz.: dissolve the Sulphate of Magnesium in the Mucilage, then add the Oil, and mix.

For one enema.

(Not in the other Pharmacopœias.)

Not Official.

MAGNESII SULPHIS (U.S.).—A white crystalline powder, which gradually oxidises to Sulphate on exposure to the air.

Solubility.—1 in 20 of Water; insoluble in Rectified Spirit. Given in the place of Sulphite of Sodium.

Recommended in diphtheria as a **gargle**, 1 in 16 of Water, or by the application of the powder to the fauces by means of a damp brush, leaving as much of the powder on the throat as possible. The comparatively low solubility of the salt is an advantage in prolonging the action.—*L.* '87, i. 404.

Dose.—20 to 30 grains.

MAGNESII SALICYLAS.—Colourless hygroscopic needles. Readily soluble in Water and Rectified Spirit.

Dose.—50 to 100 grains daily have been given with advantage in typhoid fever. —*L. M.R.* '88, 62; *P.J.* xviii. 823; *T.G.* '88, 390.

MANGANESII OXIDUM NIGRUM.

BLACK OXIDE OF MANGANESE.

MnO_2, eq. 87.

Used for producing Chlorine and Permanganate of Potassium.

Its purity may be roughly estimated by heating it with a mixture of dilute Hydrochloric and Oxalic Acids. If quite free from impurity it will wholly dissolve to an almost colourless solution, and if the operation be performed quantitatively in a flask, fitted with a Chloride of Calcium drying tube, the weight of Carbonic Acid lost multiplied by 2 ($\frac{87}{44}$) will represent the MnO_2 in the quantity operated upon—$MnO_2 + 2HCl + 2C_2H_2O_4 = MnCl_2 + 2CO_2 + 2H_2O$.

U.S. If 5 grammes of the finely-powdered Oxide be digested with 15 grammes of Water and 20 grammes of Hydrochloric Acid, and then 21 grammes of Ferrous Sulphate be added, and the mixture heated to boiling, the cooled filtrate should not acquire a blue colour on the addition of a freshly-prepared solution of Ferricyanide of Potassium. (Presence of at least 66 p. c. of pure Dioxide of Manganese.)

(Belg., Dan., Fr., Hung., Port., Russ., Span., Swiss, and U.S.; not in the others.)

Not Official.

MANGANESII OXIDUM PRÆPARATUM.

Digest finely powdered commercial black oxide in diluted Hydrochloric Acid for twenty-four hours, frequently shaking the bottle containing them; then pour off the acid; wash the oxide thoroughly with water, pouring off the lighter portions each time for use, and rejecting the heavier and coarser particles; finally dry in a water bath.

An admirable remedy for gastrodynia, pyrosis, etc. Has been recommended as an emmenagogue.

Dose.—10 to 30 grs.

Not Official.

MANGANESII SULPHAS.

Colourless or pale rose-coloured, right rhombic prisms.

Solubility.—7 in 10 of Water; insoluble in Rectified Spirit.

(Dutch, Fr., Ger., Port., Span., and U.S.; not in the others.)

Medicinal Properties.—Purgative; it is, however, little used, being uncertain in its action, and apt to cause vomiting; its taste is disagreeably styptic.

Dose.—1 to 5 grs. as a tonic; 30 to 60 grs. as a purgative.

Does not excite the liver, but is a powerful stimulant to the intestines.—Dr. Rutherford.

MANGANESII HYPOPHOSPHIS, $MnP_2H_4O_4$.—A pale pink granular powder, soluble 1 in 7 of Water.

Used in the preparation of Syrupus Hypophosphites Comp. B. P. C.

MANGANESII PHOSPHAS, $Mn_3P_2O_8.7H_2O$.—A whitish powder, prepared by precipitating a Manganous Salt with Phosphate of Sodium. When freshly precipitated, and dried without heat, it has the above formula, corresponding to 26 p. c. of Water, but commercial samples seldom lose on ignition more than 20 p. c.

Used to replace part of the Iron in Ferrous Syrups.

MANNA.

MANNA.

A concrete saccharine exudation, obtained by incision from the stem of *Fraxinus Ornus* which is cultivated for the purpose chiefly in Calabria and Sicily.

The larger and better kinds are called Flake Manna, and consist principally (60 to 80 per cent.) of Mannite, $C_6H_8(HO)_6$, eq.182; together with common Sugar and extractive matter.

(Austr., Belg., Dan., Fr., Ger., Hung., Norw., Port., Russ., Span., Swed., Swiss, and U.S.; not in Dutch.)

Pure Mannite is easily crystallized from an alcoholic solution, it cannot be fermented by Yeast, it does not reduce Fehling's Solution, and gives no brown colour with boiling Potash.

Solubility of Mannite, 1 in 5 of Water, ; 1 in 150 of Rectified Spirit.

Medicinal Properties.—A mild laxative ; does not excite inflammation ; useful for children and delicate females.

Dose.—As a laxative, 60 grs. to 1 oz.

Not Official.

MANNA DEPURATA.—Dissolve Manna, 10, in sufficient Water; strain, and evaporate to 10. It is convenient for dispensing, and keeps good for a long time.

Not Official.

MARANTA.

ARROW-ROOT.

The Starch obtained from the roots of *Maranta arundinacea*, a native of the tropical parts of America and the West Indies.

That which comes from Bermuda is considered the best.

A light white powder, or small pulverulent masses.

Test.—Free from unpleasant odour and taste.

(Austr., Belg., Dan., Fr., Norw., Port. (Araruta), Russ., Span., Swed., and Swiss; not in the others.)

Medicinal Properties.—Nutrient and demulcent, frequently taken with milk. It should be first made into a thin paste with cold milk, and boiling milk added to make a thick mucilage.

MARMOR ALBUM.

WHITE MARBLE.

$CaCO_3$, eq. 100.

Used in producing Carbonic Acid Gas.

Owing to its freedom from Iron, it should also be used in the preparation of Lime for making Liquor Calcis Saccharatus.

(Fr., Russ., and Span.; not in the others.)

MASTICHE.

MASTICH.

A concrete resinous exudation obtained by incisions in the bark of the stem and large branches of *Pistacia lentiscus*, produced in the island of Scio.

Small irregular yellowish tears, brittle and transparent.

Solubility.—Insoluble in Water; partly soluble in Rectified Spirit and Oil of Turpentine; 2 in 1 of Ether; 2 in 1 of Chloroform.

Sp. g. 1·06—1·07.

(Austr., Belg., Dan., Norw., Swed. (Resina Mastix), Dutch, Fr., Hung., Port., Russ., Span. (Almaciga), Swiss, and U.S.; not in Ger.)

Medicinal Properties.—Stimulant. Chiefly prescribed in pills to divide active medicines, and especially with mercurials when the pills are to be silvered, to prevent the silver being acted on by the mercury.

Dose.—In powder, 20 to 40 grs.

Not Official.

MASTIC DENTAIRE (Fr.).—Mastic 2, Ether 1: dissolve. Cotton saturated in this solution is a good stopping for decayed teeth.

MASTIC AND CHLOROFORM.—Mastic 2, Chloroform 1: dissolve. Used for the same purpose as above.

MATICÆ FOLIA.

MATICO LEAVES.

The dried leaves of *Piper angustifolium*, imported from Peru.

(Belg., Fr., Port., Russ. and U.S.; not in the others.)

Medicinal Properties.—An agreeable aromatic tonic and stimulant, influencing the urinary passages. Locally (in substance) as a styptic, on the supposition that its action is mechanical. Its styptic properties, however, may depend on the Volatile Oil it contains.

Dose.—Of the powder, 30 to 120 grs. three times daily.

Preparation.

INFUSUM MATICÆ.

Matico leaves, cut small, 1; boiling Distilled Water, 20: infuse half an hour, and strain.

Dose.—1 to 4 oz.

(Not in the other Pharmaeopœias.)

Not Official.

TINCTURA MATICÆ.—Matico leaves, in coarse powder, 1; Proof Spirit, 5: macerate fourteen days, strain, express, and filter. =(1 in 5).

Astringent. Useful in catarrh of the bladder of the aged.

Dose.—1 to 2 drms.

(Fr. and Russ., 1 and 5; U.S., 1 in 10; not in he others.)

MEL.

HONEY.

A saccharine secretion deposited in the honeycomb by *Apis mellifica*, the Hive Bee.

Tests.—Boiled with Water for five minutes, and allowed to cool, it does not become blue with the Solution of Iodine—indicating absence of Flour. After incineration it should not yield more than ·2 per cent. of ash, the solution of which in water acidulated with Nitric Acid should not give more than a slight turbidity with solution of Chloride of Barium (trace of Sulphate).

(In all the Pharmaeopœias.)

Medicinal Properties.—Demulcent and laxative, but apt to gripe and occasion flatulency when given in efficient doses; this is more particularly the case with old honey. It is more generally used as a vehicle for other medicines. A useful addition to gargles.

Preparations.

MEL BORACIS. 1 in 8 nearly. *See* BORAX.

MEL DEPURATUM. Clarified Honey.

Melt in a water bath, and strain while hot through flannel previously moistened with warm water.

(In all the Pharmacopœias except Fr.; Port., Mellito Simples, Span., Miel Depurado.)

Used in the preparation of Confectiones Piperis, Scammonii, and Terebinthinæ Mel Boracis, Oxymel and Oxymel Scillæ.

OXYMEL.

Clarified Honey, 8; Acetic Acid, 1; Distilled Water, 1: liquefy the honey by heat, and mix with it the other two.

A pleasant addition to Gargles. Sometimes used as a vehicle to expectorant medicines, and to flavour fever drinks.

Dose.—1 to 2 drms.

(Austr., Honey 2, Common Vinegar 1; Fr., Honey 4, White Vinegar 1; Russ., Honey 15, Acetic Acid (30 p. c.) 1; Dutch, Honey 19, Acetic Acid (30 p. c.) 1; Hung., Honey 50, Acetic Acid (96 p. c.) 1; Port., Honey 197, Acetic Acid (98 p. c.) 3; Span., Honey 23, Vinegar 8; Swed., Honey 100, Acetic Acid (29 p. c.) 8; Swiss, Honey 19, Acetic Acid (20 p. c.) 1; not in the others.)

MENTHÆ PIPERITÆ OLEUM.

OIL OF PEPPERMINT.

The Oil distilled in Britain from fresh flowering Peppermint, *Mentha piperita.*

In America the oil is distilled from the dried rather than the fresh herb, the yield being practically the same, and it is much more convenient for the distiller. About 350 lbs. fresh plant yield 1 lb. of Oil, and the plant loses about 50 p.c. of its weight in drying.—*Jour. Chem. Ind.* '88, 550.

A very pale yellow.

Sp. g. (several samples taken) ·900—·907.

Solubility.—In all proportions of Absolute Alcohol; 2 in 1 (*or less*) of Rectified Spirit, becomes milky on adding more Spirit.

(Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Norw., Port. (Essencia de Hortela Pimenta), Russ., Span., Swed., Swiss, and U.S.)

Medicinal Properties.—A grateful aromatic, stimulant, and carminative. Allays nausea, relieves spasmodic pains in the stomach. Useful in the flatulent colic of children. Covers the taste of nauseous medicines, such as Rhubarb, and mitigates the griping effect of purgatives. Externally applied, relieves facial neuralgia; also *see* Menthol.

Recommended as an antiseptic.—*L.* '88, i. 512.

Dose.—1 to 4 minims on sugar, or in emulsion.

Preparations.

AQUA MENTHÆ PIPERITÆ.

Oil of Peppermint, 1½ drms.; Water, 1½ galls.: distil 1 gall. =(Oil 1 in 853).

Dose.—1 to 2 oz.

(Belg., 1 in 333; Dutch, 1 in 1000; Russ., 1 in 2000; U.S., 1 in 500; Austr., Dan., Fr., Ger., Hung., Port., Span., Swed., and Swiss, distilled from the leaves.)

ESSENTIA MENTHÆ PIPERITÆ.

Oil of Peppermint, 1; Rectified Spirit, 4: mix. =(1 in 5).

Dose.—10 to 20 minims.

SPIRITUS MENTHÆ PIPERITÆ.

Oil of Peppermint, 1; Rectified Spirit, 49: dissolve. =(1 in 50).

(Belg. (Spiritus Menthæ) Oil 1, Spirit 99; Fr. (Teinture d'Essence de Menthe), Oil 2, Alcohol 98; Ger., 1 in 10; Swiss, 3 Oil in 100; U.S., from the leaves and oil, about 1 in 10; Austr. and Span., from leaves; not in the others.)

Dose.—30 to 60 minims, or for children under 5 years, 1 to 3 minims.

NOTE.—An agreeable syrup is made by adding 60 minims of the Spirit to 1 oz. of Simple Syrup.

MENTHÆ VIRIDIS OLEUM.

OIL OF SPEARMINT.

Syn. MENTHÆ CRISPÆ OLEUM.

The Oil distilled in Britain from fresh flowering Spearmint, *Mentha viridis.* Sp. g. about ·925.

Solubility.—In all proportions of Absolute Alcohol; 1 in 1 (*or less*) of Rectified Spirit, becomes milky on adding more Spirit.

(Belg., Dan., Hung., Norw., Port. (Essencia de Hortela), Russ., Span., and U.S.; not in the others.)

Medicinal Properties.—Similar to those of Oleum Menthæ Piperitæ.

Dose.—1 to 4 minims on sugar, in emulsion, or made into pills with powder of Gentian.

Preparation.

AQUA MENTHÆ VIRIDIS.

Oil of Spearmint, 1½ drms.; Water, 1½ galls.: distil 1 gall. =(Oil 1 in 853).

Dose.—1 to 2 oz.

(U.S., stronger; Belg. and Russ., much weaker; Dan., Ger., Port. (Agua de Hortela), Span. and Swed., from leaves; not in the others.)

MENTHOL.

$C_{10}H_{20}O$, eq. 156.

A Stearoptene obtained by cooling the Oil distilled from the fresh herb of *Mentha Arvensis vars. piperascens et glabrata,* and of *Mentha piperita.*

Colourless acicular crystals or fused crystalline masses. Its melting point should not exceed 110° F. (43°·3 C.), the hardest masses do not melt below 108° F. (42°·2 C.). It should be entirely dissipated by the heat of a water bath.

Solubility.—Almost insoluble in Water and Glycerine; soluble 5 in 1 of Rectified Spirit; 4 in 1 (nearly) of Chloroform; 8 in 3 of Ether; 10 in 7 of Benzin; 1 in 4 of Olive Oil.

(Austr.; not in the other Pharmacopœias.)

Medicinal Properties.—Useful locally in some forms of neuralgia and headache, also in rheumatism. It possesses antiseptic properties.

Dose.—½ to 2 grs.

Largely used in the form of cones and pencils.

An ethereal or alcoholic **solution** (20 to 30 p. c.) forms a useful local anæsthetic for the mucous membrane, but its effects are transient.—*L.* '85, ii. 128; *B.M.J.* '87, i. 800.

Spray containing 5 to 20 p. c. of Menthol recommended in tubercular laryngitis. —*T.G.* '87, 762.

Menthol and Iodoform equal parts as a **surgical dressing.**—*B.M.J.* '88, i. 933.

Not Official.

MENTHOLEATE.—A name given to a solution of Menthol in Oleic Acid. Menthol 200 grs., Oleic Acid ½ oz.; heat gently in a test-tube till dissolved. It is recommended as the best form for application.—*T.G.* '87, 36.

Not Official.

MENYANTHES.

BUCKBEAN.

The leaves of *Menyanthes trifoliata,* a gentianaceous plant.

(Austr., Dutch, Ger., Hung., and Swiss, Trifolium Fibrinum; Dan., Fr., Norw., Russ., and Swed., Menyanthes; Port., Trifolio Fibrino; Span., Trebol Acuatico. Not in Belg. or U.S.)

Medicinal Properties.—A bitter tonic and carthartic.

Recommended in functional amenorrhœa.—*L.* '85, i. 132, 235.

EXTRACTUM MENYANTHIS.—Buckbean exhausted with boiling Water, and the liquor evaporated to an Extract.

(Austr., Dan., Dutch, Ger., Port., Russ., Swed., and Swiss; not in the others.)

Not Official.

METHYL CHLORIDUM.

CH_3Cl.

Chloride of Methyl is a colourless gas of an ethereal odour and a sweet taste, soluble in Water to the extent of 2·8 volumes. When beet-root molasses are fermented and distilled for their alcohol, the residues yield on destructive distillation compounds of Trimethylamine. When Trimethylamine Hydrochloride is heated to 260° C. it decomposes into Trimethylamine, Ammonia, and Methyl Chloride. The mixed gases are passed through acid to absorb the alkaline vapours, and the Methyl Chloride which passes over is washed and liquefied by cold and pressure.

This liquid is prepared in Paris, and supplied in metal cylinders, some of which are fitted with a valve and a tube for producing a jet; also with a nozzle for running the liquid into a specially designed glass tube for use with tampons.

Medicinal Properties.—It is used as a local anæsthetic, producing intense cold by its evaporation. If used incautiously, it may produce blisters or eschars.—*B.M.J.* '85, i. 813; *B.M.J.* '88, ii. 243; *L.* '89, i. 190.

Not Official.

METHYLAL.

$C_3H_8O_2$.

A colourless volatile liquid (sp. g. ·855). Boils at 107° F. Readily soluble in Water and Rectified Spirit.

Medicinal Properties.—Hypnotic. Given in delirium and mania.

Toleration of the drug is soon established, when the dose must either be increased or discontinued for two or three days.—*B.M.J.* '87, ii. 894; '88, i. 481; '88, ii. 1454.

Dose.—30 to 120 minims in water.

MEZEREI CORTEX.

MEZEREON BARK.

The dried bark of *Daphne Mezereum,* Mezereon; or *Daphne Laureola,* Spurge Laurel.

(Belg., Dan., Dutch; Fr., Mézéréon ou Bois gentil; Port., Trovisco; Russ., Span., Mezereon; Swed. and U.S.; not in the others.)

Medicinal Properties.—A stimulant and vesicant. An ointment of the bark is used to keep issues or blisters open. Rarely given alone internally, but it is still retained as an ingredient in Decoctum Sarsæ Compositum. It formerly was used in the treatment of syphilis.

Preparation.

EXTRACTUM MEZEREI ÆTHEREUM.

Mezereon Bark, cut small, 4; Rectified Spirit, 40; Ether, 5: macerate the Mezereon in three-quarters of the spirit for three days with frequent agitation, strain and press. To the residue of the Mezereon, add the remainder of the Spirit, and again macerate for three days, with frequent agitation, strain and press, mix and filter the strained liquors; recover the greater part of the Spirit by distillation, evaporate what remains to the consistence of a soft extract, put this into a stoppered bottle with the Ether, and macerate for twenty-four hours, shaking them frequently, decant the ethereal solution, recover part of the Ether by distillation, and evaporate what remains to the consistence of a soft extract.

Used in preparing Linimentum Sinapis Compositum; 8 grs. are contained in 1 oz.

(Belg., Ext. Mezerei; Fr., Extrait de Garou (from the *Daphne Gnidium*), Dan., Ger., Port. (Extracto de Trovisco), and Russ., with Spirit only; U.S., Alcoholic Extract, also fluid Extract with Alcohol 1 in 1; not in the others.)

Not Official.

UNGUENTUM MEZEREI.

Belg.—Ext. Mezerei, 39; Lard, 865; Yellow Wax, 96; Alcohol (92°), 90.
Dutch.—Ext. Mezerei, 1; Simple Ointment, 10.
Fr.—Ext. Garou, 4; Lard, 90; White Wax, 10; Alcohol, 9.
Russ.—Ext. Mezerei, 1; Washed Lard, 9.
Swiss.—Mezereon Bark, 5; Yellow Wax, 2; Lard, 18.
U.S.—Fluid Extract of Mezereon, 25; Lard, 80; Yellow Wax, 12.

MICA PANIS.

SOFT CRUMB OF BREAD.

Contained in Cataplasma Carbonis.

Not Official.

CATAPLASMA MICÆ PANIS.—Grated Crumb of Bread and boiling water *q.s.*

MISTURÆ.

MIXTURES.

The following are the mixtures of the British Pharmacopœia:—

Dose.		Proportions.
½ to 1 oz.	MISTURA AMMONIACI	about 13 grs. in 1 oz.
1 to 2 oz.	MISTURA AMYGDALÆ.	compound powder 1 to 8.
1 to 2 oz.	MISTURA CREASOTI	about 1 minim in 1 oz.
1 to 2 oz.	MISTURA CRETÆ	about 13 grs. in 1 oz.
1 to 2 oz.	MISTURA FERRI AROMATICA.	
1 to 2 oz.	MISTURA FERRI COMPOSITA	2½ grs. in 1 oz.
½ to 2 oz.	MISTURA GUAIACI	about 11 grs. in 1 oz.
1 to 2 oz.	MISTURA SCAMMONII	3 grs. in 1 oz.
1 to 1½ oz.	MISTURA SENNÆ COMPOSITA . .	1 oz. Magn. Sulph. in 5 oz.
1 to 2 oz.	MISTURA SPIRITUS VINI GALLICI . .	about 1 Brandy in 2½.

MORI SUCCUS.

MULBERRY JUICE.

The deep purple juice of the ripe fruit of *Morus nigra.*

Sp. g. about 1·060.

(Fr., Suc de Mûre; Port., Amoras; Span., Zumo do Moras.)

Medicinal Properties.—Refreshing and laxative; serves to prepare a grateful drink well adapted to febrile cases.

Preparation.

SYRUPUS MORI.

Mulberry Juice, 20; Refined Sugar, 36; Rectified Spirit, 2½: heat the juice to the boiling-point, and when it has cooled filter it; dissolve the Sugar in the filtered liquid by a gentle heat, and add the spirit; the product should weigh 54. Sp. g. 1·330.

Dose.—1 to 2 drms.

(Austr., Belg., Dan., Fr. (Sirop de Mûres), Hung., Span., and Swiss; not in the others.)

An agreeable addition to a gargle for sore throat. Used as a colouring matter for draughts, 1 drm. to 1 oz.

Not Official.

MORPHINA.

$C_{17}H_{19}NO_3 . H_2O$, eq. 303.

The principal alkaloid obtained from Opium.

A white crystalline powder, bitter in taste, alkaline in reaction.

It forms crystallizable Salts with Acids.

Tests.—When dissolved in Sulphuric Acid, and a few drops of water added to make the mixture hot, the addition of a drop of Nitric Acid produces a red colour. Perchloride of Iron gives a blue colour, which, however, is not permanent, and which is interfered with by excess of acid, heat, or alcohol.

Solubility.—1 in 1000 of Cold Water; 1 in 100 of Rectified Spirit; 1 in 10 of Oleic Acid; 1 in 125 of Glycerine; insoluble in Ether (so differing from Narcotin); aqueous Alkalies, even Lime Water, dissolve it readily; Ammonia, however, but sparingly; where a very strong solution is required Hypophospherous Acid has been suggested as a solvent.

(Belg., Dan., Fr., Hung., Port., Russ., Span., Swed., Swiss, and U.S.; not in the others.)

Medicinal Properties.—Similar to the salts of Morphia, but owing to its slight solubility in water it is rarely given alone.

Dose.—$\frac{1}{10}$ to ½ gr.

Preparation.

MORPHINÆ OLEAS.—Morphine, 1 gr., dissolved in Oleic Acid, 60 grs. Used locally for the relief of pain, also in combination with Oleate of Mercury.

MORPHINÆ ACETAS.

ACETATE OF MORPHINE.

$C_{17}H_{19}NO_3 . HC_2H_3O_2 . 3H_2O$, eq. 399.

A white powder. Part of its Acetic Acid is sometimes driven off in drying; its aqueous solutions have a strong tendency to deposit basic salts, and to become acid.

Almost entirely soluble in 2½ parts of Water at common temperatures.—*Brit. Pharm.*

Although we have tested a very largo number of commercial samples, we have never found one so soluble.

Solubility.—1 in 100 of Rectified Spirit; 1 in 5 of Glycerine.

Tests.—20 grains of the Salt forms with 1 drachm of Water a slightly turbid solution, which is rendered clear by the addition of

1 grain of Acetic Acid; and this solution, when mixed with Ammonia in slight excess, yields a precipitate which, after washing with a little cold water and drying in a water bath, weighs 15 grains. If the Salt yield a larger proportion than this, it should be recrystallized from hot Water acidulated with Acetic Acid. When Sulphuric Acid is added to the Salt, acetous vapours are evolved. Its aqueous solution yields a white precipitate with Solution of Potash, soluble in excess. Ignited with free access of air it leaves no residue.

(Belg., Dan., Norw., Port., Russ., Span., Swed., Swiss, and U.S.; not in the others.)

Medicinal Properties.—Similar to those of Opium. This salt being much more soluble in Water than the Hydrochlorate is used for hypodermic injection. But by keeping, it loses some Acetic Acid and becomes partly insoluble.

Recommended in the treatment of diabetes.—*Pr.* xxxviii. 20; *B.M.J.* '89, i. 118.

Dose.—$\frac{1}{8}$ to $\frac{1}{2}$ a grain.

Incompatibles.—Alkalies and alkaline earths, astringent vegetable infusions and decoctions.

Antidotes.—*See* Hydrochlorate of Morphia.

Preparations.

INJECTIO MORPHINÆ HYPODERMICA.

A solution of Acetate of Morphine containing one grain of the Acetate in ten minims of the injection.

Hydrochlorate of Morphine, 92 grs.; Solution of Ammonia, Acetic Acid and Distilled Water, of each a sufficiency.

Dissolve the Hydrochlorate of Morphine in two ounces of distilled water, aiding the solution by a gentle heat; then add Solution of Ammonia so as to precipitate the Morphine, and render the liquid slightly alkaline; allow it to cool; collect the precipitate on a filter, wash it with distilled water, and allow it to drain; then transfer the Morphine to a small porcelain dish with about an ounce of distilled water, apply a gentle heat, and carefully add Acetic Acid until the Morphine is dissolved, and a very slightly acid solution is formed. Add now sufficient distilled water to make the solution measure exactly two fluid ounces. Filter and preserve the product in a stoppered bottle excluded from the light.

When a comparatively fresh Acetate of Morphia is available this solution is more readily made by suspending 96 grains of the Salt in an ounce of Water, and dissolving it with the smallest possible excess of Acetic Acid, making up to 2 ozs. and filtering.

It will have a sp. g. 1·027.

Tests.—It should be a clear solution free from any solid particles, very slightly acid to test-paper. A fluid drachm of it, rendered slightly alkaline by the addition of Solution of Ammonia, yields a precipitate of Morphine which, after being washed and dried, should weigh 4·25 grains, corresponding to 6 grains of Acetate of Morphine.

Note.—This solution is practically the same strength as before; 1 fluid drachm now yields 4·25 grains, and formerly it yielded 4·3 grains. The solution is now stated to contain 1 grain of Acetate of Morphine in 10 minims, and formerly 1 grain in 12 minims, but this apparent difference is chiefly owing to the alteration in the chemical formula of the Salt.

Dose.—By subcutaneous injection 1 to 5 mins.

LIQUOR MORPHINÆ ACETATIS.

Acetate of Morphine, 9 grs.; Diluted Acetic Acid, 18 minims; Rectified Spirit, ½ oz.; Distilled Water, 1½ oz.: dissolve the Acetate in the mixed liquids. =(1 in 100).

1 grain is now contained in 107 minims, formerly 1 in 123 minims.

B. P. Note.—The Acetate of Morphine should be recently prepared and of such quality that 20 grains should form a clear solution with 1 fluid drachm of Water by the help of not more than 1 grain of Acetic Acid.

Dose.—10 to 60 minims.

Not Official.

LIQUOR MORPHINÆ ACETATIS HYPODERMICUS (1 in 6).—1 grain of the Acetate of Morphine in every 6 minims of the solution, which should be nearly neutral. This solution has been in use for many years.

Dose.—1 to 3 minims for each injection.

LIQUOR MORPHINÆ ET ATROPINÆ HYPODERMICUS.—Acetate of Morphine, 10 grs.; Sulphate of Atropine, ¼ gr.; Water, 60 minims; dissolve.

½ grain of Acetate of Morphine and $\frac{1}{80}$ grain of Sulphate of Atropine in every 3 mins.

Dose.—1 to 3 minims for each injection.

Atropine combined with Morphine increases its calming effect, whilst it lessens its constipating effect.

MORPHINÆ BIMECONATIS LIQUOR.

SOLUTION OF BIMECONATE OF MORPHINE.

The preparation originally known by this name is described below.

The British Pharmacopœia gives the following formula:—

Dissolve Hydrochlorate of Morphine 9 grains in 2 or 3 drachms of Distilled Water, aiding solution by warmth; then add Solution of Ammonia until Morphine ceases to be precipitated, cool, filter; wash the precipitate with Distilled Water until the washings cease to give a precipitate with Nitrate of Silver; drain; mix the precipitate with sufficient water to produce 1½ oz.; add Rectified Spirit ½ oz. and Meconic Acid 6 grains: dissolve.

A colourless or nearly colourless liquid, of which 1 fl. oz. contains about 5½ grains of Bimeconate of Morphine.

Dose.—5 to 40 minims.

Not Official.

LIQUOR MORPHIÆ BIMECONATIS (SQUIRE).

This preparation was introduced by the Author in 1839 as a purified Solution of Opium containing the whole of the alkaloids in their natural state of combination, and is now standardised to contain 1 per cent. of Morphine.

It differs from Tincture of Opium in that the volatile and extractive matters, to which the unpleasant secondary effects of Opium have been attributed, are removed in the process of its manufacture.

The Solution of the same name inserted in the B. P. of 1885, though obviously intended to take its place, differs so widely from the original in its properties and method of preparation, that it is no substitute for it.

See p. 300.

MORPHINÆ HYDROCHLORAS.

HYDROCHLORATE OF MORPHINE.

Syn. Muriate of Morphia.

$C_{17}H_{19}NO_3.\ HCl.\ 3H_2O$, eq. 375·5.

A white powder, or in thin prisms of a silky lustre.

Solubility.—1 in 24 of Water, 1 in 90 of Rectified Spirit; 1 in 8 of Glycerine; insoluble in Ether.

Tests.—Its aqueous solution gives a white curdy precipitate with Nitrate of Silver (Chloride), and a white one with Potash (Morphine), which is redissolved when an excess of the alkali is added. Entirely destructible by heat, leaving no residue. 20 grains of the Salt, dissolved in half an ounce of warm water, with Ammonia added in the slightest possible excess, give, on cooling, a crystalline precipitate, which, when washed with a little cold water and dried in a water bath, weighs 16 grains—pure Morphine.

The following are reckoned on the B. P. standard of Opium containing 10 p. c. of Morphine:—

1 gr. Hydrochl. Morph. = $9\frac{1}{3}$ grs. Opium = 8 grs. Powd. Opium = $4\frac{2}{3}$ grs. Ext. Opium = 117 minims Tinct. Opium.

(Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Norw., Port., Russ., Span., Swed., Swiss, and U.S.)

Medicinal Properties.—Hydrochlorate of Morphine possesses the anodyne and soporific powers of Opium, yet it acts more agreeably, being less likely to produce headache and nausea. It is also less exciting and stimulating than Opium.

In uræmia.—*L.* '89, ii. 208, 263.

Has no appreciable effect on the secretion of bile, and does not prevent the stimulating effect of such a substance as the Salicylate of Soda.—Dr. Rutherford.

Dose.—$\frac{1}{8}$ to $\frac{1}{2}$ gr.

Incompatibles.—Alkalies and Alkaline Earths, astringent vegetable Infusions and Decoctions.

Antidotes.—If taken by the mouth, induce vomiting, and wash out the stomach. Keep the patient walking about, and rouse him in every way. Ammonia or Spirit of Sal Volatile to the nose, inject a pint of strong coffee into the bowel. Hypodermic injection of Sulphate of Atropia $\frac{1}{20}$ gr., repeating in quarter hour if necessary. Tincture of Belladonna, Nitrite of Amyl inhalation, artificial respiration.—*Murrell on Poisons.* $\frac{1}{32}$ gr. Strychnine acts as an antidote to $\frac{1}{2}$ gr. of Morphine.—*L.* '71, ii. 840, 907; Picrotoxine, $\frac{1}{20}$ gr., *L.* '89, i. 497.

Preparations.

LIQUOR MORPHINÆ HYDROCHLORATIS.

Hydrochlorate of Morphine, 9 grs.; Diluted Hydrochloric Acid, 18 minims; Rectified Spirit, $\frac{1}{2}$ oz.; Distilled Water, $1\frac{1}{2}$ oz.: dissolve. =(about 1 in 100).

Now contains about 1 grain in 109 minims, formerly 1 in 123 minims.

Dose.—10 to 60 minims.

(Port., Soluto de Chlorhydrato de Morphina, 1 in 20, for hypodermic injection: not in the other Pharmacopœias.)

A Solution for Hypodermic injection cannot be made (cold) stronger than 1 in 20. If a stronger solution is used, it must be injected whilst warm; the solution of the Acetate therefore is more convenient.

SUPPOSITORIA MORPHINÆ.

Hydrochlorate of Morphine, 6 grs.; Oil of Theobroma, 174 grs.: rub the Hydrochlorate of Morphine with 24 grs. of the Oil of Theobroma in a slightly warmed mortar, and add this to the remainder of the Oil of Theobroma previously melted at a low temperature; mix the whole thoroughly, and pour the mixture while it is fluid into suitable moulds of the capacity of 15 grs.

Each suppository contains ½ grain of Hydrochlorate of Morphine.
(Not in the other Pharmacopœias.)

SUPPOSITORIA MORPHINÆ CUM SAPONE.

Hydrochlorate of Morphine, 6 grs.; Glycerine of Starch, 30 grs.; Curd Soap, in powder, 100 grs.; Starch, in powder, a sufficiency.

Mix the Hydrochlorate of Morphine with the Glycerine of Starch and Soap, and add sufficient starch to form a paste of suitable consistence. Divide the mass into twelve equal parts, each of which is to be made into a conical or other convenient form for a suppository.

Each suppository contains ½ grain of Hydrochlorate of Morphine.

TINCTURA CHLOROFORMI ET MORPHINÆ.

The formula is given under Chloroform.

TROCHISCI MORPHINÆ.

Lozenges made with Hydrochlorate of Morphine, Tincture of Tolu, Sugar, and Gum Acacia.

Each lozenge contains $\frac{1}{36}$ gr. of Hydrochlorate of Morphine.

Dose.—One or two occasionally for cough.

TROCHISCI MORPHINÆ ET IPECACUANHÆ.

Lozenges prepared with Hydrochlorate of Morphine, Ipecacuanha, Tincture of Tolu, Sugar, and Gum Acacia.

Each lozenge contains $\frac{1}{36}$ gr. of Hydrochlorate of Morphine, and $\frac{1}{12}$ gr. of Ipecacuanha.

Dose.—One or two occasionally for cough.

(U.S. contains $\frac{1}{40}$ gr. of Sulphate of Morphine, and $\frac{2}{25}$ gr. of Ipecacuanha in each.)

Not Official.

MORPHINÆ LACTAS.

$C_{17}H_{19}NO_3.C_3H_6O_3$, eq. 375.

A white crystalline salt.

Solubility.—1 in 8 of Water, 1 in 93 of Rectified Spirit.
Dose.—⅛ to ½ grain.

MORPHINÆ SULPHAS.

SULPHATE OF MORPHINE.

$(C_{17}H_{19}NO_3)_2, H_2SO_4, 5H_2O$, eq. 758.

Colourless acicular crystals.

Solubility.—1 in 20 of Water, freely in hot Water; sparingly in Rectified Spirit.

Tests.—Its aqueous solution gives a white precipitate (Morphine) with Solution of Potash, soluble in excess; and with Chloride of Barium a white precipitate (Sulphate), insoluble in hot Hydrochloric Acid.

(Belg., Dutch, Fr., Ger., Norw., Port., Span., Swiss, and U.S.; not in the others.)

Dose.—⅛ to ½ grain.

Not Official.

MORPHINÆ TARTRAS.

$C_{17}H_{19}NO_3.C_4H_6O_6.3H_2O$, eq. 489.

A white powder.

Solubility.—1 in 10 of Water; sparingly in Rectified Spirit.
Dose.—⅛ to ½ grain.

MORRHUÆ OLEUM.

COD-LIVER OIL.

The Oil extracted from the fresh liver of the Cod *Gadus morrhua* by a steam-heat or water bath not exceeding 180° F. (82·2° C.). Slightly yellow.

Solubility.—Sparingly in Absolute Alcohol; 1 in 2 of Ether; 1 in 3½ to 4 of Acetic Ether.

Sp. g. from 0·920 to 0.929.

Test.—A drop of Sulphuric Acid added to a few drops of the Oil on a porcelain slab develops a violet colour, which soon passes to a yellowish or brownish red.

(Austr., Belg., Dan., Dutch, Ger., Hung., Norw., Russ., Swed., and Swiss, Ol. Jecoris Aselli; Fr., Huile de Foie de Morue; Port., Oleo de Bacalhau; Span., Aceite de Higado de Bacalao; U.S., Oleum Morrhuæ.)

A solvent of pure Quinine. 1 oz. at 140° F. will dissolve 4 grains readily.

Medicinal Properties.—Nutrient and demulcent. Most efficient in scrofulous diseases, glandular swellings, diseases of the joints, tabes mesenterica, rickets, and chronic rheumatism: and generally in all chronic cases of impaired digestion, assimilation, and nutrition. In pulmonary consumption it deservedly possesses a high reputation: sometimes given in emulsion with Malt Extract.

Dose.—Brit. Ph. dose, 1 to 8 drms. 1 to 4 drms., on Orange Juice, Water, or a mixture of Tincture of Orange with Diluted Nitric Acid and Syrup.

2 drms. rubbed with 30 grs. of Powdered Acacia and 1½ drms. of Distilled Water till an emulsion is formed, and then 1 oz. of Peppermint Water gradually added, with constant trituration, forms a nice emulsion.

The oil is sometimes given in flexible capsules.

Cod-Liver Oil has engaged much attention amongst Pharmaceutists. The Year-books of Pharmacy are full of suggestions how to render it palatable; one author finishes up with a triumph, that the particles of Oil struggle in vain for re-union.

The following formula makes a good Emulsion:—

Powder of Tragacanth	27 grs.
Rubbed into a paste by first adding Syrup	¼ oz.
And then Water	1½ oz.
Rub these into a good mucilage, and add by a thin stream Cod-Liver Oil	2½ oz.
These being well incorporated, add gradually Distilled Water	2½ oz.
And lastly Essence of Lemon	12 minims.
Essential Oil of Almonds	1 minim.

Previously dissolved in ¾ oz. of Rectified Spirit.

The excellency of the Emulsion is in proportion to the diligence of the operator in using his pestle and mortar.

EMULSIO OLEI MORRHUÆ (*B.P.C.*).—Cod-Liver Oil, 8 fl. ozs.; the yolks of 2 Eggs; Tragacanth in powder, 16 grs.; Elixir of Saccharin, 60 mins.; Simple Tincture of Benzoin, 60 mins.; Spirit of Chloroform, ½ oz.; Essential Oil of Bitter Almonds, 8 mins.; Distilled Water to produce 16 fl. ozs. Measure 5 ozs. of the Water; place the Tragacanth in a dry mortar and triturate with a little of the Cod-Liver Oil; then add the yolks of Eggs, and stir briskly, adding water as the mixture thickens. When of a suitable consistence, add the remainder of the Oil and

Water alternately, with constant stirring, avoiding frothing. Transfer to a pint bottle, add the Elixir of Saccharin, Tincture of Benzoin, Spirit of Chloroform, and Oil of Almonds, previously mixed; shake well, and add Distilled Water if necessary to make the product measure 16 fl. ozs.

Dose.—2 to 8 fluid drachms.

Pancreatized Cod-Liver Oil is prescribed under the impression that it is more easily digested than Cod-Liver Oil alone.

MORRHUOL.—Cod-Liver Oil treated first with aqueous solution of Carbonate of Sodium, at a low temperature, to remove the acids, then agitated with Rectified Spirit; the Alcoholic Solution, subjected to distillation, yields Morrhuol. Brown Oil yields 4½ to 6 p. c., the straw coloured 2½ to 3 p. c.—*Y.B.P.* '86, 234.

Proposed as a substitute for Cod-Liver Oil, but without the Carbo-hydrates, and owing to its small bulk is adapted for administration in capsules.

Dose.—3 grains.

MOSCHUS.

MUSK.

The inspissated and dried secretion from the preputial follicles of *Moschus moschiferus*, a native of the mountainous regions of Central Asia; imported from China and India.

In grains or lumps concreted together, soft and unctuous to the touch, of a reddish-brown colour, having a strong and peculiar odour; contained in an oval sac or membrane about two inches in diameter.

It should be free from earthy impurities.

(In all the Pharmacopœias except Austr.; Fr., Musc, Port., Almiscar, Span., Almizcle.)

Medicinal Properties.—Stimulant and antispasmodic. Useful in hysteria and epilepsy.

Dose.—5 to 10 grs. in pill or mixture.

Not Official.

MISTURA MOSCHI.—Musk, 3; Acacia, 3; Sugar, 3; Rose Water, 160; triturate the Musk with the Sugar, then with the Acacia; add the Rose Water gradually.

Dose.—1 to 2 oz.

TINCTURA MOSCHI.—Musk, 60 grs.; Rectified Spirit, 10 oz.: digest seven days, and strain.

Belg., Fr., and Port.—Musk, 1; Spirit, 10.
Dan., Dutch, Ger., Russ., and Swiss.—Musk, 1; Spirit, 25; Water, 25.
Span.—Musk, 1; Spirit, 25.
U.S.—Musk, 10; Water, 45; Alcohol, 45; Diluted Alcohol to make 100. All by weight.

MUCILAGINES.

MUCILAGES.

Mucilages are employed more as vehicles than as remedies. Mucilage of Acacia is sometimes given to relieve irritating cough, but more generally to render Oils and solutions of Resins miscible with Water; *see* ACACIA. M. Amyli, for Enemas; M. Tragacanthæ, for Lozenges, and also for suspending heavy powders in mixtures, in preference to M. Acaciæ.

The Mucilages are:—

MUCILAGO ACACIÆ.
MUCILAGO AMYLI.
MUCILAGO TRAGACANTHÆ.

MYRISTICA.

NUTMEG.

The dried seed of *Myristica fragrans*, divested of its hard coat or shell.

It is cultivated in the Banda Islands of the Malayan Archipelago, imported from Sumatra and the Molucca Islands.

(Austr., Dan., Dutch, Ger., Russ., Swed., and Swiss, Semen Myristicæ; Belg. and Hung., Nux Moschata; Fr., Muscade; Port., Noz Moschada; Span., Nuez Moscada; U.S. Myristica; not in Norw.)

Medicinal Properties.—Aromatic, stimulant, and carminative. Chiefly used to cover the taste of Rhubarb and other medicines. The expressed and Volatile Oils have been much used in lotions for the hair.

Dose.—5 to 15 grs.

Contained in Pulvis Catechu Compositus, Pulvis Cretæ Aromaticus, Spiritus Armoraciæ Compositus, Tinctura Lavandulæ Composita.

Preparations.

OLEUM MYRISTICÆ.

The oil distilled in Britain from Nutmeg. This injunction of the British Pharmacopœia is necessary, the foreign oil being very much inferior to that distilled in Britain.

Sp. g. We find that the samples have varied between ·880—·896 and ·912—·923.

Solubility.—In all proportions of Absolute Alcohol; 1 in 4½ of Rectified Spirit; sparingly in Proof Spirit.

Dose.—1 to 4 minims on Sugar, or in emulsion.

(Austr., Dutch, Ger., Hung., Russ., and Swiss, Oleum Macidis; Russ., has also Oleum Myristicæ Æthereum; Belg., Essentia Macidis; Dan., Norw., and Swed., Ætherolcum Macidis; Port., Essencia de Noz Moschada; U.S., Oleum Myristicæ; not in Fr. or Span.)

Contained in Sp. Ammon. Aromat. and Pilula Aloes Socotrinæ.

OLEUM MYRISTICÆ EXPRESSUM. *Syn.* MYRISTICÆ ADEPS.

A concrete oil, of a firm consistence and orange colour, obtained from Nutmeg by expression and heat.

(Austr. and Russ., Ol. Myristicæ Expressum; Belg., Ger., and Swiss, Ol. Nucistæ; Dutch, Norw., and Swed., Oleum Myristicæ; Fr., Beurre de Muscade; Port., Oleo de Noz Moschada; Span., Aceite de Nuez Moscada; not in the others.)

Contained in Emplastrum Calefaciens and Emplastrum Picis.

SPIRITUS MYRISTICÆ.

Volatile Oil of Nutmeg, 1; Rectified Spirit, 49: dissolve.

=(1 in 50).

Dose.—30 to 60 minims.

(U.S. 3 in 100; not in the other Pharmacopœias.)

MYRRHA.

MYRRH.

A gum-resinous exudation from the stem of *Balsamodendron myrrha*, collected in Arabia Felix and Abyssinia.

In irregular-shaped masses, of a reddish-yellow or reddish-brown colour.

Solubility.—Myrrh contains from 40 to 65 p.c. of gum soluble in Water, the remainder consisting of resin is mostly soluble in Alcohol.

(In all the Pharmacopœias except Hung.)

Medicinal Properties.—A stimulant tonic. Useful in asthma and chronic catarrh; also in chlorosis and defective menstruation. Locally to aphthæ of mouth and gums.

Dose.—10 to 30 grs.

Contained in Decoctum Aloes Compositum, Mistura Ferri Composita, Pilula Aloes et Myrrhæ, Pilula Asafœtidæ Composita, Pilula Rhei Composita.

Preparation.

TINCTURA MYRRHÆ.

Myrrh, in coarse powder, 1; Rectified Spirit, 8: macerate forty-eight hours with 6 of the spirit, agitating occasionally, pack in a percolator, and when it ceases to drop pour on the remaining spirit, press the marc, filter, and add Rectified Spirit to make 8. =(1 in 8).

Dose.—$\frac{1}{2}$ to 1 drm. Frequently mixed with water to form a gargle; also with solutions of Borax for mouth washes.

(Austr., Belg., Dan., Dutch, Fr., Ger., Norw., Port., Russ., Span., Swed., and Swiss, 1 and 5; U.S. 1 in 5; all by weight.)

Not Official.

GARGARISMA MYRRHÆ.—Tincture of Myrrh, 1; Honey, 1; Infusion of Roses, 18: mix.

TINCTURE OF MYRRH AND BORAX.—*See* Borax.

Not Official.

NAPHTHALENE.

$C_{10}H_8$, eq. 128.

Purified Naphthalene occurs in white micaceous scales, with a tarry odour.

Solubility.—Insoluble in Water; soluble 1 in 25 of Rectified Spirit; 1 in $1\frac{1}{2}$ of Chloroform; 1 in 3 of Ether; 1 in $7\frac{1}{2}$ of Oil of Turpentine; 1 in 8 of Olive Oil; slightly soluble in Glycerine.

Test.—Should dissolve colourless in warm Concentrated Sulphuric Acid.

(Austr. and Dutch; not in the others.)

Medicinal Properties.—Insecticide. Employed locally with success in scabies as a 10 or 20 per cent. solution in oil. In other skin diseases, especially those in which large surfaces are exposed, it is to be avoided.—*L.* '82, ii. 909.

In catarrhal conditions of the intestines, also in vesical catarrh. *Adult dose*, 60 to 75 grs. daily.—*A. J. P.*, '84, 645; *L.* '85, ii. 404.

As an antiseptic for wounds.—*L.* '85, ii. 821; *B. M. J.*, '86, i. 217.

In dysentery, 7 or 8 grs. to 1 oz. of water for an enema.—*L.* '88, i. 1327; *T. G.* '85, 412.

In typhoid fever.—*T. G.* '85, 676; *L.* '89, ii. 659, 720.

In doses of 23 grs. per diem.—*L.* '86, ii. 745.

In single doses of 15 grs., or daily doses of 75 grs.—*T. G.* '86, 243.

Preparations.

NAPHTHALINUM PRÆCIP.—A fine powder, obtained by dissolving the crystals in hot Alcohol and pouring into a quantity of cold Water. Recommended as less irritating than the powdered crystals.

PULVIS NAPHTHALINI (Rossbach).—Purified Naphthalene, 75 grs.; Sugar, 75 grs.; Oil of Bergamotte, $\frac{1}{2}$ min.; divide into twenty powders.

In vesical catarrh.—*L.* '85, i. 360.

Not Official.

NAPHTHOL.

BETA-NAPHTHOL.

$C_{10}H_7,HO$, eq. 144.

Small white crystalline scales, almost free from odour.

Solubility.—Nearly insoluble in Water; soluble 1 in 2 of Rectified Spirit; 3 in 4 of Ether; 1 in 24 of Chloroform; 1 in 12 of Olive Oil; 1 in 40 of Glycerine.

It is distinguished from its isomer Alpha-Naphthol by its melting at 123° C. giving a pale yellow colour with bleaching powder, and a pale green with Ferric Chloride. Alpha-Naphthol melts at 95° C., gives a dark violet with bleaching powder, and a red with Ferric Chloride.

(Austr., Dutch, and Hung.; not in the others.)

Medicinal Properties.—A powerful disinfectant. Has been given in 5 grain doses for diarrhœa in children. Best administered dissolved in Oil, which is then emulsified.

It is very effective in parasitic diseases and in chronic eczema.—*M.T.* '82, ii. 505.
Daily dose of 38 grs. will produce intestinal antisepsis.—*T.G.* '88, 120.
In typhoid fever.—*B.M.J.* '88, ii. 1226.

For Scabies.—β-Naphthol, 15; Pulv. Cretæ Alb., 10; Sapo virid., 50; Lard, 100.

For Pediculi.—β-Naphthol, 5; Olive Oil, 50.

For Pityriasis Versicolor.—β-Naphthol, 2; Spir. Lavand., 10; Sapo virid., 100.—*M.T.* '82, ii. 505.

UNGUENTUM NAPHTHOLI (*B.S.H.*) *Syn.* Kaposi's Ointment.—Beta-Naphthol, 60 grs.; Prepared Lard, 1 oz.

NAPHTHOL-CAMPHOR.—β-Naphthol, 1; Camphor, 2: rub to a powder, then warm together.

BETOL.—Salicylate of β-Naphthol Ether. In tasteless, small white crystals, insoluble in Water, soluble in Alcohol and fixed Oils. Recommended in rheumatism, cystitis and intestinal catarrh.—*P.J.* xviii. 264.

Dose.—2½ to 8 grains as a powder, or in pills.

In **pencils** for gonorrhœa containing 20 per cent. of Betol made with Oil of Theobroma.

NECTANDRÆ CORTEX.

BEBEERU BARK.

The dried bark of *Nectandra Rodiæi*, Greenheart Tree, imported from British Guiana.

The bark is intensely bitter, and contains an alkaloid, Beberine ($C_{18}H_{21}NO_3$), which is identical with Buxine, the alkaloid of *Buxus sempervirens*, and Pelosine, obtained from *Cissampelos Pareira*.

Sulphate of Beberine of Brit. Pharm. is a mixed substance.

(Port., Beberu; not in the others.)

Medicinal Properties.—Tonic and antiperiodic. Used in remittent and intermittent fevers, though not to be relied on as a substitute for Cinchona.

BEBERINÆ SULPHAS.—*See* BEBERINÆ SULPHAS.

Not Official.

NICKEL.

A metal closely allied to Cobalt, with which it is generally associated in minerals. Commercially it is largely contaminated with Copper, Iron, and sometimes Cobalt. Alloyed with Copper and Zinc, it forms **German silver.** Easily soluble in mineral acids, forming salts of a characteristic green colour.

NICCOLI BROMIDUM.—Soluble in Water, Alcohol, and Ether.

Sedative. Recommended in Epilepsy.

Dose.—$\frac{3}{4}$ gr. in pills, with powdered Althæa and Ext. Gentian.—*L.M.R.* '87, 108.

SYRUPUS NICCOLI BROMIDI.—Granulated Nickel, 137 grs.; Bromine, 377 grs.; Water, 12 ozs.; digest them in a pint flask at a gentle heat until reaction ceases, filter, add Sugar 24 ozs. and sufficient Water to make 32 fl. ozs.

Each fluid drachm contains 5 grs. of Bromide of Nickel, which is an average dose. —*A.J.P.* '86, 592.

NICCOLI SULPHAS.—Greenish blue crystals, readily soluble in Water.

Dose.—$\frac{1}{2}$ to 1 gr. two or three times a day given in chlorosis; is best given on a full stomach, as on an empty one it is apt to produce nausea.

Not Official.

NITRO-GLYCERINE.

Syn.—TRINITRATE OF GLYCERYL. GLONOIN. TRINITRIN.

$C_3H_5(NO_3)_3$.

When pure it is a heavy colourless Oil. Sp. g. 1·6. Explodes violently on percussion, and under some circumstances spontaneously. It solidifies at 46° F., and is then more dangerous to handle.

Solubility.—Very slightly soluble in Water; readily in Alcohol; mixes with Ether and Chloroform.

Medicinal Properties.—Chiefly given for angina pectoris. It reduces arterial tension in contracted kidney.

Dose.—$\frac{1}{200}$ to $\frac{1}{50}$ gr., the average dose being $\frac{1}{100}$ gr., generally given as 1 per cent. solution in Rectified Spirit, on Sugar or diluted with Water.

The solution is preferable to the tablet.—*L.* '85, ii. 546; *L.* '89, i. 1238.

SPIRITUS GLONOINI.—Nitro-glycerine, 1 gr.; Rectified Spirit to make 100 minims. This is not strictly a one per cent. solution, but it is convenient for dispensing and dosage.

Dose.—$\frac{1}{2}$ to 2 minims.

(Dutch (Solutio Nitroglycerini), 1 in 100; not in the others.)

Official Preparation.

TABELLÆ NITROGLYCERINI.

Tablets of Chocolate, each weighing $2\frac{1}{2}$ grs. and containing $\frac{1}{100}$ gr. of pure Nitro-glycerine.

Dose.—1 or 2 tablets.

Antidotes.—Ergot, Atropia, Strychnia, cold applications to the head.

NUX VOMICA.

NUX VOMICA.

The seeds of *Strychnos Nux-vomica*, imported from the East Indies. The chief source of Strychnine and Brucine.

(Austr., Dutch, Ger., and Russ., Semen Strychni; Belg., Dan., Fr. (Noix Vomique), Hung., Norw., Port. (Noz Vomica), Span. (Nuez Vomica), Swed., Swiss, and U.S.)

Medicinal Properties.—In very small doses, tonic. In larger doses it operates on the whole system through the spinal motor nerves, indicated by involuntary muscular contractions. Useful in palsy, chorea, and all paralytic affections, and in cases of feeble muscular contractility. It is recommended in atonic dyspepsia, and in debilitated conditions of the alimentary canal. Generally prescribed in the form of Extract and Tincture.

Dose.—Of the powder, 1 to 3 grs.

Antidotes.—Emetic of Sulphate of Zinc, Mustard, or Ipecacuanha, or hypodermic injection of Apomorphia; Animal Charcoal; Bromide of Potassium or Chloral; Nitrite of Amyl inhalations; Chloroform or Ether to relax the muscles; hypodermic injection of Curare. (*Murrell on Poisons.*)

Preparations.

EXTRACTUM NUCIS VOMICÆ.

Nux Vomica, 16; Rectified Spirit, 64; Distilled Water, 16. Heat the previously split Seeds to a temperature of 212° F. (100° C.) for three hours, and then reduce to a fine powder. Mix the Spirit with the Water, and make the powdered Nux Vomica into a paste with 20 of the mixture. Allow this to macerate for twelve hours, then transfer to a percolator, and add another 20 of the mixture. When this has percolated, pour on the remainder of the Diluted Spirit in successive portions; press the marc, filter the expressed liquor, and add it to the percolated liquid.

Take of this liquid 1 fl. oz., and estimate the amount of total alkaloid in the following way:—Evaporate almost to dryness over a water bath, dissolve the residue in 2 fl. drms. of Chloroform and half a fl. oz. of Diluted Sulphuric Acid, with an equal bulk of Water; agitate and warm gently. When the liquors have separated, draw off the Chloroform, and add to the acid liquor excess of Solution of Ammonia and half a fl. oz. of Chloroform; well agitate, gently warm, and, after the liquors have completely separated, transfer the Chloroform to a weighed dish, evaporate over a water bath, and dry for one hour, at 212° F. (100° C.). Allow the residue of total alkaloid to cool, and then weigh.

Take of the percolated liquid as much as contains 131¼ grains of total alkaloid, distil off the spirit, and evaporate over a water bath until the extract weighs 2 oz. This extract will contain 15 per cent. of total alkaloid.

Different strength spirit used, and the extract is standardised.

Test.—10 grains of the extract when treated in the following manner should yield 1½ grain of total alkaloid. Dissolve the extract in half a fl. oz. of Water, heating gently if necessary, and add a drm. of Carbonate of Sodium previously dissolved in half a fl. oz. of Water, and half a fl. oz. of Chloroform; agitate, warm gently, and separate the Chloroform. Add to this half a fl. oz. of Diluted Sulphuric Acid with an equal bulk of Water; again agitate, warm, and separate the acid liquor from the Chloroform. To this acid liquor add now an excess of Ammonia, and agitate with half a fl. oz. of Chloroform; when the liquors have separated, transfer the Chloroform to a weighed dish, and evaporate the Chloroform over a water bath. Dry the residue for one hour, and weigh.

Dose.—¼ to 1 gr. Often with Aloes and Ipecacuanha.

(Austr., Belg., Dan., Dutch, Ger., Hung., Russ., and Swiss use 70 per cent. Alcohol; Norw. and Swed., 65 per cent.; Fr., Span., and U.S., 80 per cent.; Port., 90 per cent. U.S., has also an Abstract and Fluid Extract; Russ., has also an Aqueous Extract.)

TINCTURA NUCIS VOMICÆ.

Extract of Nux Vomica, 133 grs.; Distilled Water, 4 oz.; Rectified

Spirit, a sufficiency: mix sufficient of the spirit with the water to produce 20 oz., and dissolve the extract in the mixture.

1 fl. oz. of this tincture will contain 1 gr. of the alkaloids of Nux Vomica.

Dose.—10 to 20 minims.

(Tinct. Strychni, Austr., 1 in 10, Ger. and Russ., 1 and 10; Belg., Fr., Port., and Span. 1 and 5; Dan., Norw., Swed., and Swiss, 1 and 10; Dutch, 1 Extract in 100; Hung. and U.S., 1 in 5; Russ., has also Tinct. Strychni Etherea 1 and 10 of Spirit of Ether; all by weight and prepared from the seeds.)

STRYCHNINE.—*See* STRYCHNINA.

Not Official.

BRUCINE, $C_{23}H_{26}N_2O_4.4H_2O$.—Colourless crystals, containing about 15 p.c. of Water, which quickly effloresce in dry air.

Solubility.—1 in 3500 of Water; 1 in 20 of Rectified Spirit, 1 in 2 of Chloroform, with separation of the combined Water. Its salts are bitter, and most of them crystallizable. They are distinguished by giving a deep red with strong Nitric Acid, changing to violet on the addition of Chloride of Tin.

It possesses powerful analgesic properties, in 5 per cent. solutions of the Sulphate or Nitrate applied locally.—*T.G.* '85, 376; '86, 18.

OLEA.

OILS.

The term Oleum is applied in the British and some of the Foreign Pharmacopœias to an Oil whether expressed or distilled; the names used by the other Pharmacopœias are, for the fixed Oils—French, Huile; Portuguese, Oleo; Spanish, Aceite; and for the Volatile Oils—Belgian, Essentia; Danish, Norwegian, and Swedish, Ætheroleum; French, Huile Volatile; Portuguese, Essencia; Spanish, Esencia.

The following are the Oils of the British Pharmacopœia, and will be found under the names of the substances from which they are derived; an average percentage yield is also given:—

		Per cent.
OLEUM AMYGDALÆ.	Expressed from the seed	42
OLEUM ANETHI.	Distilled from the fruit	2·8 to 3
OLEUM ANISI.	Distilled from the fruit and imported	2
OLEUM ANTHEMIDIS.	Distilled from the flowers	0·75
OLEUM CAJUPUTI.	Distilled from the leaves and imported.	
OLEUM CARUI.	Distilled from the fruit	5
OLEUM CARYOPHYLLI.	Distilled from the flower-bud	16
OLEUM CINNAMOMI.	Distilled from the bark.	
OLEUM COPAIBÆ.	Distilled from the oleo-resin	35 to 45
OLEUM CORIANDRI.	Distilled from the fruit	0·6
OLEUM CROTONIS.	Expressed from the seeds	25
OLEUM CUBEBÆ.	Distilled from the unripe fruit	11
OLEUM EUCALYPTI.	Distilled from the leaves and imported.	
OLEUM JUNIPERI.	Distilled from the unripe fruit	0·8
OLEUM LAVANDULÆ.	Distilled from the flowers	1·5
OLEUM LIMONIS.	Expressed or distilled from the fresh peel.	
OLEUM LINI.	Expressed from the seeds without heat.	
OLEUM MENTHÆ PIPERITÆ.	Distilled from the fresh herb.	
OLEUM MENTHÆ VIRIDIS.	Distilled from the fresh herb.	

	Per cent.
OLEUM MORRHUÆ. Extracted from the fresh liver by heat	42
OLEUM MYRISTICÆ. Distilled from the seed kernel	5·5
OLEUM MYRISTICÆ EXPRESSUM. Expressed from the seed with heat	13
OLEUM OLIVÆ. Expressed from the ripe fruit and imported.	
OLEUM PHOSPHORATUM.	
OLEUM PIMENTÆ. Distilled from the unripe berry	4
OLEUM PINI SYLVESTRIS. Distilled from the fresh leaves.	
OLEUM RICINI. Expressed from the seeds and imported.	
OLEUM ROSMARINI. Distilled from the flowering tops	0·5
OLEUM RUTÆ. Distilled from the fresh herb.	
OLEUM SABINÆ. Distilled from fresh Savin.	
OLEUM SANTALI. Distilled from the wood . . . 2 to 4, sometimes	4½
OLEUM SINAPIS. Distilled with water from the seeds of Black Mustard after the expression of the fixed oil.	
OLEUM TEREBINTHINÆ. Distilled from Turpentine and imported.	
OLEUM THEOBROMATIS. Expressed with heat from the seeds	25

Not Official.

OLEATES.

These preparations have come into more general use during the last few years. They were originally made by dissolving the oxide of the metal, or the alkaloid, in an excess of Oleic Acid; but more recently Dr. Shoemaker proposed the method of precipitation by double decomposition between a salt of the base and Solution of Castile Soap (Oleate of Sodium with a little Palmitate); Solution of Oleate of Potassium may be used with advantage in place of the Solution of Castile Soap, when the pure Oleate is required. The Oleate can also be purified from Palmitate by solution in Benzin.

The various Oleates will be found under the headings of their respective bases.

OLIVÆ OLEUM.

OLIVE OIL.

The Oil expressed from the ripe fruit of *Olea Europæa.* Pale yellow or greenish-yellow.

Chiefly obtained from the south of Europe. Sp. g. about 0·915.

Congeals partially at about 36° F. (2·2° C.). (*Brit. Pharm.*)

The above congealing point seems to be generally accepted, but we think it requires modification. The congealing point depends greatly upon the length of time to which the Oil is exposed to cold. For instance, an Oil cooled by Ether to 9° F. remained unchanged, but when kept at 32° F. for four hours it partially solidified. Some samples of Oil pressed by ourselves, from Olives grown in the South of France, showed no sign of congelation during six hours at 32° F., or three hours at 15° F.; on the other hand, in the following year an Oil from the same district (guaranteed pure) set at once when cooled quickly to 13° F., and within two hours at 32° F.

Solubility.—1 in 2 of Ether; partially in Rectified Spirit.

(Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Norw., Port. (Azeite), Russ., Span. (Aceite), Swed., Swiss, and U.S.)

Medicinal Properties.—Nutritious and mildly laxative, demulcent in the form of emulsion. Has also been successfully given for ascarides, followed by a purge. Used in laxative enemata. It is most extensively employed in pharmacy, in the preparation of liniments, ointments, and plasters.

Recommended in the treatment of gall stones. 30 ozs. taken in five doses.—*B.M.J.* '88, i. 933; *T.G.* '88, 785.

On the contrary it is stated to favour the production of gall stones.—*L.* '89, ii. 710.

Dose.—½ to 1 oz.

Used in the preparation of Enema Magnesii Sulphatis, Linimentum Ammoniæ, Linimentum Calcis, Linimentum Camphoræ, Sapo Durus, Sapo Mollis, some Emplastra and Unguenta.

OPIUM.

OPIUM.

The juice obtained in Asia Minor by incision from the unripe capsules of *Papaver somniferum, Linn.*, inspissated by spontaneous evaporation.

Any ordinary variety of Opium may be employed as a source of alkaloids, and of extract of official strength; but, when otherwise used for officially recognised purposes, Opium must be that obtained in Asia Minor, and must be of such a strength that when dried and powdered and the powder heated to 212° F. (100° C.) until it ceases to lose moisture, and the product tested by the appended method, or any trustworthy method, it shall yield as nearly as practicable 10 per cent. of Morphine; that is, 100 parts of such dry powdered Opium shall yield not less than 9·5 parts, and not more than 10·5 parts, of Morphine.

Opium yielding from 11 to 15 per cent. of Morphine is now readily obtained.

Opium is derived almost exclusively from the *Papaver somniferum.* This plant was cultivated by the early Greeks, and is at present grown for its Opium, in India, Persia, Egypt, and Asiatic Turkey. In France and Germany, it is cultivated more for the sake of its seed, and in England for its capsules. The process of wounding the capsules and collecting the opium has continued the same for the last 1800 years.* Smyrna Opium, and also that of Constantinople, are employed in this country. Specimens of Persian Opium in fingers, of Patna in squares, of Benares in balls covered with skin, and Egyptian in flat pieces like that of Constantinople, are to be found in several museums.

MORPHIA, CODEIA, APOMORPHIA, will be found under their respective heads.

NARCEINA.—Discovered by Pelletier, in 1832. In white, silky, acicular crystals: neutral, with a slightly bitter taste. Soluble in 375 parts of cold and in 220 of hot Water, also in Alcohol; insoluble in Ether. It is considered by some observers to possess hypnotic properties.

Dilute Sulphuric Acid added to Narcein, then concentrated over a water-bath, gives rise to a beautiful violet colour, which changes to cherry red on further heating. If to this red liquid when cooled a trace of Nitric Acid is added, blue violet streaks appear.—*P.R.* '87, 215.

Narcein should not melt under 165° C. Chemically pure Narcein should be free from Acid, and complete fusion should not take place under 170° C.—*P.J.* xix. 1034.

(Belg., Fr., Russ., and Swiss; not in the others.)

NARCOTINA.—First noticed by Derosne, in 1803. In thin pearly tables. It is neutral. Insoluble in Water; soluble in Ether, in boiling Alcohol, in diluted acids; insoluble in solution of Potash. Forms a yellow solution with Nitric Acid. It has no narcotic properties, and has therefore been called Anarcotina; it has been given in 5-grain doses as a substitute for Quinine.

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* An interesting account of this process is given by Mr. Maltass, in the *Pharmaceutical Journal*, February, 1855.

(Russ. and Swiss; not in the other Pharmacopœias.)

PAPAVERINA.—Discovered by Dr. Merck. In white crystalline needles. Insoluble in Water; sparingly soluble in Alcohol and Ether. According to Merck, when moistened with strong Sulphuric Acid, it becomes dark blue, but Hesse states that pure Papaverin dissolves colourless in that acid cold, but when heated becomes dark violet.

(Russ.; not in the other Pharmacopœias.)

Spurious Opium has from time to time found its way into the market; and some very similar in external appearance to the best Opium has been found on analysis to contain very little Morphine.

British Pharmacopœia gives the following test:—

Test.—Take of Opium, dried at 212° F. (100° C.), 140 grs.; freshly Slaked Lime, 60 grs.; Chloride of Ammonium, 40 grs.; Rectified Spirit, Ether, and Distilled Water, of each a sufficiency. Triturate together the Opium, Lime, and 400 grain-measures of Distilled Water in a mortar until a uniform mixture results; then add 1000 grain-measures of Distilled Water and stir occasionally during half an hour. Filter the mixture through a plaited filter, about three inches in diameter, into a wide-mouthed bottle or stoppered flask (having the capacity of about 6 fl. oz. and marked at exactly 1040 grain-measures) until the filtrate reaches this mark. To the filtered liquid (representing 100 grs. of Opium) add 110 grain-measures of Rectified Spirit and 500 grain-measures of Ether, and shake the mixture; then add the Chloride of Ammonium, shake well and frequently during half an hour, and set it aside for twelve hours. Counterbalance two small filters; place one within the other in a small funnel, and decant the ethereal layer as completely as practicable upon the inner filter. Add 200 grain-measures of Ether to the contents of the bottle and rotate it; again decant the ethereal layer upon the filter, and afterwards wash the latter with 100 grain-measures of Ether added slowly and in portions. Now let the filter dry in the air, and pour upon it the liquid in the bottle in portions, in such a way as to transfer the greater portion of the crystals to the filter. When the fluid has passed through the filter, wash the bottle and transfer the remaining crystals to the filter, with several small portions of Distilled Water, using not much more than 200 grain-measures in all, and distributing the portions evenly upon the filter. Allow the filter to drain, and dry it, first by pressing between sheets of bibulous paper, and afterwards at a temperature between 131° and 140° F. (55° and 60° C.), and finally at 194° to 212° F. (90° to 100° C.). Weigh the crystals in the inner filter, counterbalancing by the outer filter. The crystals should weigh 10 grs., or not less than 9½ and not more than 10½ grs., corresponding to about 10 per cent. of Morphine in the dry powdered Opium.

About ½ grain of Morphine is lost in the above process, owing to its solubility.

The French Pharmacopœia states that Smyrna Opium, dried at 100° C., should contain at least 10 to 12 per cent. of Morphine.

14 of good Smyrna Opium fresh from the chest, when dried, weigh 12, and the extract from it weighs 7.

(Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Norw., Port., Russ., Span., Swed., Swiss, and U.S.)

Medicinal Properties.—Opium produces three main physiological effects:—It diminishes pain. It causes sleep. It arrests secretion, excepting that of the skin, which it promotes.

In small doses it excites the vascular and nervous systems, increasing the rapidity and fulness of the pulse; this is followed by sleep, accompanied with perspiration. It is apt to produce nausea, headache, thirst, and constipation. If the dose be large, the sleepiness becomes intense, and there is difficulty in waking the patient. By continued use, it impairs the appetite, digestion, and intellect. It also acts on the respiratory system, diminishing the frequency of respirations, and thus impairing the oxidation of the blood. Great caution should be exercised in giving Opium to infants and young children, as they are very susceptible to its action.

Dose.—Of the powder, $\frac{1}{2}$ to 2 grs. $=\frac{1}{16}$ to $\frac{1}{4}$ gr. Hydrochlorate of Morphine.

When *small* pills of Opium are desired, 25 grains of powdered Opium with 1 minim of Syrup and 1 minim of water will form a nice pill mass.

Incompatibles.—The Alkaline Carbonates, Lime Water, Salts of Lead, Iron, Copper, Mercury, and Zinc, Liquor Arsenicalis, and all astringent Vegetables.

Antidotes.—In case of poisoning by Opium, the antidotes are an emetic of 10 grs. of Sulphate of Copper, the stomach pump, external stimulants, cold affusion, Ammonia to the nostrils, compelled exertion, and artificial respiration. Belladonna or hypodermic injection of Atropine is also recommended; Strychnine; Nitrite of Amyl; Gelsemium.

Preparations.

CONFECTIO OPII.

Compound Powder of Opium, 100 grs.; Syrup, 300 grs.: mix.
=(1 of Powder of Opium in 40).

Dose.—5 to 20 grains.

Tablets of Confection of Opium are small hard cylinders, about one inch long, and weighing 20 grs. Are recommended to be taken for a "nightcap" in Brandy and Water.

EMPLASTRUM OPII.

Opium in very fine powder, 1; Resin Plaster, 9: melt the Resin Plaster by the heat of a water bath, add the Opium by degrees, and mix thoroughly.
=(1 in 10).

Anodyne, to relieve local pain.

(Belg., 1 Opium in 20; Fr., 3 Extract in 4; Port. and Span., 1 Extract in 10; Swiss, 1 Opium in 15; U.S., 1 Extract in 16; not in the others.)

ENEMA OPII.

Tincture of Opium, $\frac{1}{2}$ drm.; Mucilage of Starch, 2 oz.: mix for one enema.

(Not in the other Pharmacopœias.)

EXTRACTUM OPII. [STANDARDISED.]

Opium in thin slices, 16 oz.; Distilled Water, 6 pints (120 oz.): macerate the Opium in 2 pints (40 oz.) of the Water twenty-four hours, and express the liquor. Reduce the residue of the Opium to a uniform pulp, macerate it again in 2 pints (40 oz.) of the Water for twenty-four hours, and express. Repeat the operation a third time. Mix the liquors, strain through flannel, and evaporate by a water bath until the product weighs about 8 oz.

B. P. states that it should contain 20 per cent. of Morphine.

This is less stimulating than powdered Opium, and is preferred as a direct sedative.

100 of good Opium yield 50 of extract.

Dose.—½ to 1 gr. or more.

(Austr., Belg., Dutch, Fr., Ger., Hung., Port., Russ., Span., Swiss, and U.S.; not in Dan., Norw., or Swed.)

EXTRACTUM OPII LIQUIDUM. [STANDARDISED.]

Extract of Opium, 1; Distilled Water, 16; Rectified Spirit, 4; digest the Extract of Opium in the Water for an hour, stirring frequently; then add the Spirit and filter. The product should measure 20. =(1 oz. Ext. in 20 oz.).

Contains 1 grain of Extract in 22 minims.

B. P. states that it should contain about 1 per cent. of Morphine.

Dose.—10 to 40 minims.

(Rather stronger than the Wine, and about one-third stronger than the Tincture.)

Produces the effects of Opium, but with less derangement of the nervous system.

LINIMENTUM OPII. Deposits a good deal when kept.

Tincture of Opium, 1; Liniment of Soap, 1: mix. =(1 in 2).

The addition of the Opium to the Soap Liniment renders it more useful in many cases of rheumatism and local pains.

(Not in the other Pharmacopœias.)

PILULA SAPONIS COMPOSITA.

Opium, in fine powder, 1; Hard Soap, in powder, 4; Glycerine, a sufficiency: mix the Soap with the Opium, and add Glycerine sufficient to make a pill mass. =(1 Powder of Opium in 6, nearly).

Glycerine is used in the place of Water.

Nearly 6 grains contain 1 grain of Powder of Opium.

Anodyne and soporific.

Dose.—3 to 5 grains.

(Pil. de Cynoglosso, Belg. and Fr., 1 Extract in 10, Dan. and Norw., 1 Opium in 7½, Span., 1 Extract in 11; Port., Pilulas de Opio Comp., 1 Extract in 10; U.S., Pilula Opii, Opium 1, Soap ¼. Not in the other Pharmacopœias.)

PULVIS OPII COMPOSITUS.

Opium, 3; Black Pepper, 4; Ginger, 10; Caraway, 12; Tragacanth, 1; all in powder: mix. (The dry ingredients for making Confectio Opii.) =(1 of Powder of Opium in 10).

Dose.—2 to 5 grains.

TINCTURA OPII. (Laudanum.) [STANDARDISED.]

Opium, in coarse powder, 1½; Proof Spirit, 20: macerate seven days, strain, express, filter, and add Proof Spirit to make 20. =(1 oz. in 13⅓ oz.).

1 gr. in 14⅔ minims.

B. P. states that it should contain about ·75 per cent. of Morphine; this is rather a low standard for it, 1 per cent. would have been better.

40 minims = 30 minims Ext. Opii Liq., or 33 minims Vin. Opii.

A valuable anodyne and soporific, preferred to solid Opium when a more immediate effect is required.

Dose.—5 to 40 minims.

(Austr., Dan., Dutch, Ger., Hung., Norw., Russ., Swed., Swiss, and U.S., 1 in 10; Belg., 1 in 11·9; Span., 1 in 12; Fr., 1 Extract in 12; Port., 1 Extract in 20; all by weight.)

TINCTURA OPII AMMONIATA. The Scotch Paregoric. Deposits much when kept.

Opium, in powder, 100 grs.; Saffron, cut small, 180 grs.; Benzoic Acid, 180 grs.; Oil of Anise, 60 minims; Strong Solution of Ammonia, 4 oz.; Rectified Spirit, 16 oz.: macerate seven days in a closed vessel, with occasional agitation, strain, and add sufficient Rectified Spirit to make 20 oz. =(1 Powdered Opium in 96 minims).

Dose.—$\frac{1}{2}$ to 1 drm.

(Russ., uses Oil of Fennel in place of Oil of Anise, otherwise they are alike. Not in the others.)

TROCHISCI OPII.

Lozenges made of Extract of Opium, Tincture of Tolu, Sugar, Gum Acacia, and Extract of Liquorice.

Each lozenge contains $\frac{1}{10}$th gr. of Extract of Opium, which, by the B. P. standard should represent $\frac{1}{50}$th gr. of Morphine.

Dose.—1 to 6 lozenges.

(U.S., Extract of Opium $\frac{1}{20}$th gr. in each; not in the others.)

VINUM OPII. Deposits a good deal when kept.

Extract of Opium, 1 oz.; Cinnamon Bark, 75 grs.; Cloves, 75 grs.; Sherry Wine, 20 oz.: macerate for seven days, with occasional agitation, and filter. =(about 1 oz. Extract in 20 oz.).

22 minims = 1 gr. Extract.

Each fluid drachm contains about $\frac{1}{2}$ gr. of Morphine.—*Brit. Pharm.*

(Dan., 1 Opium in 10; Dutch, 1 and 5; Fr., 1 in 8; Norw., Swed., and U.S., 1 in 10; Belg., with aromatics, 1 *Extract* in 15, and without, 1 strained Opium in 12; Port., 1 Extract in 20; all by weight.)

Dose.—10 to 40 minims.

Used as a **collyrium**, 1 to 16 of Water.

Vinum Opii Brit. Ph. 1864 is without aromatics, and is therefore preferred by some oculists; the formula is as follows:—

Opium, in powder, $1\frac{1}{2}$; Sherry, 20: macerate seven days, and filter. =(1 powder in $13\frac{1}{3}$).

Other preparations containing Opium.	Proportions of Opium in the mass.
PILULA IPECACUANHÆ CUM SCILLA	1 in 23 nearly
PILULA PLUMBI CUM OPIO	1 in 8.
PULVIS CRETÆ AROMATICUS CUM OPIO	1 in 40.
PULVIS IPECACUANHÆ COMPOSITUS	1 in 10.
PULVIS KINO COMPOSITUS	1 in 20.
SUPPOSITORIUM PLUMBI COMPOSITUM	1 gr. in each.
TINCTURA CAMPHORÆ COMPOSITA	$\frac{1}{4}$ gr. in 1 fl. drm.
UNGUENTUM GALLÆ CUM OPIO	1 in $14\frac{2}{3}$.

	Proportions of Morphine in the mass.
MORPHINÆ ACETATIS INJECTIO HYPODERMICA	1 in 10.
MORPHINÆ ACETATIS LIQUOR	1 in 100.
MORPHINÆ BIMECONATIS LIQUOR	1 in 80.
MORPHINÆ HYDROCHLORATIS LIQUOR	1 in 100.
SUPPOSITORIUM MORPHINÆ	$\frac{1}{2}$ gr. in each.
SUPPOSITORIUM MORPHINÆ C. SAPONE	$\frac{1}{2}$ gr. in each.
TROCHISCI MORPHINÆ	$\frac{1}{36}$ gr. in each.
TROCHISCI MORPHINÆ ET IPECAC.	$\frac{1}{36}$ gr. in each.

Not Official.

AQUA OPII.—Dried Opium, 1; Water, 12: distil 6.
Occasionally employed in eye lotions. Aq. Opii, 1: Aq. Sambuci, 7.

UNGUENTUM OPII.—Soft extract of Opium, 1; Simple Ointment, 9: mix. = (1 in 10).

SOLUTION OF BIMECONATE OF MORPHIA (Squire.) *See* also p. 283.—Same strength and same dose as Tincture of Opium. This was introduced into medicine by the Author in 1839; it possesses in an eminent degree the sedative powers of Morphine. Dr. Roots thus writes of it:—"I have taken it myself daily now very nearly four years, and during that period I have frequently prescribed it in my private practice. The result of my observations of its effects on myself and others amounts to this, namely, that it disturbs the head less, that it distresses the stomach less, and that it constipates the bowels less, than any other preparation of Opium. I have taken every other preparation of Opium, but from none of them have I obtained the same degree of quiet rest that I have enjoyed from this Bimeconate of Morphia."

The Author here records a case of a lady who had taken this preparation from 1841 to 1869, a period of twenty-eight years. The late Dr. Chambers and Mr. Benjamin Phillips attended her; they quite thought that she could not live three months, and they decided that full doses of this preparation should be tried. At length enormous doses were given, *a fluid ounce six times in the twenty-four hours.* The result of this was an entire cessation both of the hæmorrhage from the lungs and the night perspirations, and she began to gain flesh. After some years the dose was diminished gradually till it amounted to 6 drms. twice in the twenty-four hours, and to this she strictly adhered up to the time above mentioned.

LIQUOR OPII SEDATIVUS (Battley) has enjoyed a reputation for a long time as an anodyne and sedative superior to Tincture of Opium, but it is somewhat stronger, say, 50 per cent.; dose 10 to 20 minims.

SYDENHAM'S LAUDANUM.—Contains Saffron, and occurs in the majority of the foreign Pharmacopœias under the following titles:—

Tinctura Opii Crocata. Sydenham's Laudanum.
- Austr.—Opium 15, Saffron 2, Alcohol 15, Cinnamon Water to make 150.
- Hung.—Opium 15, Saffron 15, Cinnamon Water, 150.
- Ger.—Opium 15, Saffron 5, Cloves 1, Cinnamon 1, Alcohol (68 p. c.) 75, Water 75.
- Russ.—Opium 16, Saffron 6, Cloves 1, Cinnamon 1, Sherry Wine 152.
- Swiss.—Opium 16, Saffron 6, Cloves 1, Cinnamon 1, Alcohol (70 p. c.) 80, Water, 80.

Laudanum Sydenhami.
- Belg.—Extract of Opium 67, Saffron 34, Oil of Cloves 1¼, Water 380, Cinnamon Water 90, Alcohol (60 p. c.) to make 1000.

Laudanum de Sydenham.
- Fr.—Opium 40, Saffron 20, Cloves 3, Cinnamon 3, Grenache Wine, 320.

Vinum Thebaicum Crocatum.
- Dan.—Opium 16, Saffron 4, Cloves 1, Cinnamon 1, Malaga Wine 160.
- Norw. and Swed.—Opium 15, Saffron 5, Cloves 1, Cinnamon 1, Malaga Wine 150.

Vinum Opii Aromaticum.
- Dutch.—Saffron 4, Cloves 1, Cinnamon 1, Alcohol (70 p. c.) 10, Malaga Wine 90, to 95 of this Liquor add Opium 10.

Vinho de Opio Composto.
- Port.—Extract of Opium 5, Saffron 3, Cloves 1, Cinnamon 1, Madeira Wine, 100.

Vino de Opio Compuesto.
- Span.—Opium 15, Saffron 7½, Cloves 1, Cinnamon 1, White Wine 135.

Dose.—5 to 20 minims.

BLACK DROP.—Acetum Opii Crocatum.
1 drop is equal to 4 drops of Tincture of Opium.

Dose.—1 to 8 minims.

LINIMENTUM OPII AMMONIATUM (*B.P.C.*)—Liniment of Soap, 6; Compound Camphor Liniment, 6; Tincture of Opium, 6; Liniment of Belladonna, 1; Stronger Solution of Ammonia, 1: mix and, after standing a week, filter quickly.

OS USTUM.

BONE ASH.

The residue of bones which have been burned to a white ash in contact with air. It consists principally of Phosphate of Calcium mixed with about 10 per cent. of Carbonate of Calcium, and a little Fluoride of Calcium, Silica, and Phosphate of Magnesium.

(Fr., Os Calcinés; Port., Ossos Calcinados; Span., Huesos Calcinados; Swed.; not in the others.)

Used to prepare Calcii Phosphas and Sodii Phosphas.

OVI ALBUMEN.

EGG ALBUMEN.

The liquid white of the egg of *Gallus Bankiva*, var. domesticus.

(Fr. and Port.; not in the others.)

OVI VITELLUS.

YOLK OF EGG.

The yolk of the egg of *Gallus Bankiva*, var. domesticus.

Contained in Mistura Spiritus Vini Gallici.

OXYMEL. *See* MEL.

OXYMEL SCILLÆ. *See* SCILLA.

Not Official.

PANCREATIC ENZYMES.

Pancreatic juice has been found to possess four distinct properties: conversion starch, conversion of proteids, emulsification of fats, and curdling of milk.

Each of these properties is attributed to a peculiar soluble ferment or enzyme.

The enzymes of the pancreatic juice act only in neutral or alkaline solutions. Their action is suspended in feebly acid solutions, and when digested at 40° C. (104° F.) for an hour in a solution of pepsine of the normal acidity of the stomach (equal to ·2 p.c. Hydrochloric Acid), or when digested with some gastric juice, they are destroyed. They are also destroyed in solution by heating to 71° C. (160° F.).

TRYPSIN acts slowly on solid albuminoid masses (boiled egg-albumen), but with great rapidity on soluble albumens, such as the casein of milk. It converts albumens into peptones and subsequently into bodies which are not proteids, Leucine, Tyrosine, &c.

PANCREATIC DIASTASE converts starch into dextrin and maltose.

It is usually stated to be identical with the diastase of Malt, but it cannot be so, as we find that it is affected quite differently to the latter by acid and alkali. Diastase from either source acts most rapidly in solutions which are practically neutral. The Malt ferment is retarded by acid, but almost stopped by a very small quantity (about ·1 p.c.) of alkali; the Pancreatic ferment on the contrary is retarded by alkali and almost stopped by a minute quantity of acid.

EMULSIVE ENZYME, fresh pancreatic tissue or pancreatic juice, emulsifies fats, but it is very doubtful whether any extract or solution prepared from the pancreas has the same property.—(*Sir W. Roberts*).

Foster states that pancreatic juice splits up neutral fats into their respective acids and glycerine, but Roberts has failed to corroborate this with pancreatic tissue or pancreatic extract.

Pancreatic digestion in the human body is an intestinal one, it takes place in the duodenum: another intestinal ferment exists in the small intestine which converts cane-sugar into invert-sugar.

As both pancreatic diastase and trypsin have been shown by Roberts to be destroyed in the stomach, they are useless for internal administration, but they are peculiarly suited for peptonising, or artificially digesting, foods for the use of the sick.

LIQUOR PANCREATICUS.—The pancreas, preferably of the pig, is first well freed from fat, then cut up into small pieces, and finally mixed with four times its weight of Dilute Spirit (Rectified Spirit 1, Water 3) in a covered vessel; it should be well agitated at least once a day; at the end of a week it should be strained through muslin and then filtered till bright.

PEPTONISED MILK.—A pint of milk is diluted with 4 ozs. of water and heated to 140° F. (60° C.).* To this add two teaspoonfuls of the Liquor Pancreaticus and 20 grains of Bicarbonate of Sodium. Place in a jug and cover with a "cosey" to keep it warm. At the end of an hour, or rather more, boil the contents of the jug. The product can be used like ordinary milk.

Peptonised Milk can also be prepared at about 60° to 65° F. Dilute a pint of Milk with half a pint of Lime Water, or with half-a-pint of water containing 20 grains of Bicarbonate of Sodium in solution; to this add three teaspoonfuls of Liquor Pancreaticus: the mixture is set aside in a jug for three or four hours, by which time the milk will have developed a slightly bitter taste and will be ready for use.

The bitter taste is well covered by Soda Water, or it may be warmed and sweetened for infants.

If it is used when ready it need not be boiled, but if not it must be boiled to prevent the change proceeding far enough to render it unpalatable.

PEPTONISED GRUEL.—Gruel from wheaten flour, oatmeal, arrowroot, sago, pearl barley, pea or lentil flour, should be very well boiled and made thick and strong. It is then poured into a covered jug and allowed to cool to a lukewarm temperature. Liquor Pancreaticus is then added, two teaspoonfuls to a pint of gruel. At the end of three hours the product is boiled and strained. The starch of the meal is converted into sugar, and the albuminoid matters are peptonised.

PEPTONISED MILK-GRUEL.—To a good thick gruel, prepared from any of the above-mentioned farinaceous articles, while still hot, add an equal quantity of cold milk; the mixture will be about 125° F. (52° C.). To each pint of this mixture add two teaspoonfuls of Liquor Pancreaticus and 20 grains of Bicarbonate of Sodium. Set aside in a warm place for two or three hours until a perceptible bitterness is developed and not longer, then heat to the boiling point and strain.

PEPTONISED BEEF-TEA.—Half-a-pound of finely minced lean beef is mixed with a pint of water and 20 grains of Bicarbonate of Sodium. This is simmered for two hours in a covered saucepan; the resulting beef-tea is decanted off into a covered jug, the undissolved beef residue is then beaten up with a spoon into a pulp and added to the beef-tea. When it has cooled down to about 140° F. (60° C.) a tablespoonful of the Liquor Pancreaticus is stirred in. The mixture is kept warm for two or three hours and occasionally stirred. At the end of this time the contents of the jug are boiled briskly for two or three minutes and finally strained. Beef-tea prepared in this way is rich in peptone, and when seasoned with salt is scarcely distinguishable in taste from ordinary beef-tea.

PEPTONISED NUTRITIVE ENEMATA.—The enema may be prepared in the usual way with milk-gruel and beef-tea, and a dessertspoonful of Liquor Pancreaticus should be added to it just before administration.

In the warm temperature of the bowel the ferments find a favourable medium for their action on the nutritive materials with which they are mixed.

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* If a thermometer is not handy the proper temperature may be obtained by boiling one-half of the mixture and adding it to the other half which is cold.

It must be borne in mind that peptonised foods are very liable to change on keeping, and that fresh quantities should be prepared every twelve hours or they must be re-boiled.—*Sir W. Roberts*, Lumleian Lectures.

PANCREATISED FAT or PANCREATIC EMULSION.

The process of making Purified Pancreatic Emulsion is divided into three parts. (See "Proceedings of the Royal Society," 1867.)

1. Make Crude Emulsion.
2. Convert the Crude Emulsion into Pancreatized Fat.
3. Make the Purified Emulsion out of the Pancreatized Fat.

1. To make Crude Emulsion:—

Fresh Pancreas of the pig freed from fat and all extraneous matter, 25 lbs.; Lard 20 lbs.; Water, 3 gallons: bruise the Pancreas in a marble mortar, then add the lard, beat and mix well together, adding the water little by little as it becomes absorbed till 3 gallons are used. Strain by squeezing through muslin.

2. To make Pancreatized Fat:—

Treat the Crude Emulsion with Ether, in the proportion of three parts of Ether to one of Emulsion. Mix well, and allow the mixture to stand till two strata are formed,—(*a*) an ethereal solution of pancreatized fat at the top, (*b*) a watery stratum at the bottom. Decant the ethereal stratum and filter, put it into a proper still, and recover the Ether by distillation. The result is Pancreatized Fat.

3. To make Purified Pancreatic Emulsion:—

Pancreatized Fat, 2; Rectified Spirit, 1; Distilled Water, 3; Oil of Cloves, a sufficiency: mix gradually in a marble mortar, adding the Spirit and Water little by little, and enough Oil of Cloves to give a slight flavour.

Tests.—The "Pancreatised Fat," when made into Lead Plaster by Oxide of Lead, should yield Glycerine.

The "Watery Stratum" left after decanting the ethereal stratum of pancreatized fat (No. 2) should yield no Glycerine.

The "Purified Pancreatic Emulsion" should be permanent, and should have an acid reaction.

Dose.—From 1 to 4 drms. mixed in milk or water, from once to four times in twenty-four hours.

Not Official.

PAPAIN.

Syn. Papayotin.

A digestive ferment extracted from Papaw juice (*Carica papaya*).

An amorphous powder, more or less white.

It dissolves animal proteids, and its action resembles that of the pancreatic juice, It acts best in neutral or slightly alkaline solutions.

Its solution is stated to dissolve false membranes in croup and diphtheria, and to be a good application to ulcers.—*L.* '85, ii. 86, and '87, ii. 164; *B.M.J.* '85, ii. 151, and '88, i. 1296; *T.G.* '86, 406; *P.J.* xv. 507, and xx. 227.

Dose.—2 to 10 grains.

PAPAVERIS CAPSULÆ.

POPPY CAPSULES.

The nearly ripe capsules of the White Poppy, *Papaver somniferum*, dried; from plants cultivated in Britain.

(Austr., Belg., Dan., Dutch, Ger., Hung., and Russ.; Fr. (Pavot); Port. (Dormideiras); Span. (Adormidera); not in the others.)

Medicinal Properties.—Similar to Opium, but weaker and of uncertain strength.

Preparations.

DECOCTUM PAPAVERIS.

Poppy Capsules, bruised, 2 oz.; Distilled Water, 30 oz.: boil ten minutes in a covered vessel, and strain; then pour over the contents of the strainer as much Distilled Water as will make the strained product 20 oz. =(1 in 10).

An external soothing application, applied warm.

(Span., Infusion, 1 in 35; not in the others.)

EXTRACTUM PAPAVERIS.

Poppy Capsules, freed from seeds, in No. 20 powder, 16 oz.; Rectified Spirit, 2 oz.; boiling Distilled Water, a sufficiency: mix the Poppy Capsules with 40 oz. of the water, stirring them frequently during twenty-four hours, then pack in a percolator, and pass water slowly through them until about 160 oz. have passed through, or until the Poppy Capsules are exhausted. Evaporate the liquor by a water bath to 20 oz; when cold, add the spirit. After twenty-four hours, filter the liquid and evaporate on a water bath to a pilular consistence.

Dose.—2 to 5 grs.

(Belg., Fr., and Span.; not in the other Pharmacopœias.)

SYRUPUS PAPAVERIS.

Poppy Capsules, freed from seeds and reduced to No. 20 powder, 36 oz.; Rectified Spirit, 16 oz.; Refined Sugar, 64 oz.; boiling Distilled Water, a sufficiency. Infuse the Poppy Capsules in 80 oz. of the water for twenty-four hours, stirring frequently, then pack in a percolator, and adding more of the water, allow the liquor slowly to pass until 320 oz. have been collected, or the Poppies are exhausted; evaporate the liquor by a water bath until it is reduced to 60 oz.; when quite cold, add the spirit, let the mixture stand for twelve hours, and filter. Distil off the spirit, evaporate the remaining liquor to 40 oz., and then add the sugar; the product should weigh 104 oz., and measure 78¾ oz., and should have the sp. g. 1·330. =(1 in nearly 2¼).

Dose.—1 drm.; 10 to 20 minims for children, increasing cautiously in consequence of their susceptibility to the influence of Opium.

In this process the spirit is added to the cooled decoction, and thus coagulates the gummy matters; the filtered liquor, now being made into a syrup with the sugar, will be preserved from fermentation even in hot weather.

(Austr., 1 in 10; Belg., Syr. Diacodii with alcoholic *extract* and simple syrup, 1 in 100; Dan., about 1 in 12; Dutch, 1 in 10; Fr., Sirop de Pavot Blanc, 1 of extract of Poppy in 100; Ger., 1 in 10; Hung., Syr. Diacodii, 1 in 27; Port., Xarope de Dormideiras, 1 in 13½; Russ., about 1 in 14; Span., Jarabe de Adormideras, 1 extract in 100; Swiss, 1 in 13; not in U.S.)

Not Official.

EXTRACTUM PAPAVERIS LIQUIDUM.—The liquid obtained by the process for making the syrup (previous to adding the spirit and the sugar), 3; Rectified Spirit, 1: mix.

Dose.—30 to 60 minims.

Decoctum Concentratum is the liquid extract without the spirit.

PARAFFINUM DURUM.

HARD PARAFFIN.

Syn. Paraffin Wax; Solid Paraffin.

A mixture of several of the harder members of the Paraffin series of hydrocarbons; usually obtained by distillation from shale, separation of the liquid oils by refrigeration, and purification of the solid product.

Colourless, inodorous, and tasteless.

Sp. g. ·82 to ·94.

Melting point. A very wide range is given in the B. P. from 110° to 145° F. (43·3° to 62·8° C.), and the consistency of the ointments may vary considerably. There is also a great difference in the commercial value of Paraffin melting at 110° and that at 145° F.

Solubility.—Insoluble in Water, sparingly soluble in Absolute Alcohol, slightly soluble in Ether.

It should leave no residue on ignition.

(Belg., Dutch, Ger., and Hung., Paraffinum Solidum (melts at 74° to 80° C.); Fr. Paraffine (melts 44° to 65° C.); not in the others.)

Used in the preparation of Unguentum Acidi Borici, U. Acidi Carbolici, U. Acidi Salicylici, U. Eucalypti, U. Glycerini Plumbi Subacetatis, U. Hydrargyri Oxidi Rubri, U. Potassæ Sulphuratæ, U. Sulphuris Iodidi, U. Veratrinæ.

PARAFFINUM MOLLE.

SOFT PARAFFIN.

Syn. PETROLATUM; UNGUENTUM PARAFFINUM; VASELINUM.

A semi-solid mixture containing some of the softer or more fluid members of the Paraffin series of hydrocarbons; usually obtained by purifying the less volatile portions of Petroleum.

White or yellowish, translucent and soft, and sometimes showing a strong fluorescence when melted.

Free from acidity, alkalinity, or any unpleasant odour or flavour, even when warmed to 120° F. (48·9° C.).

Sp. g. at the melting point, ·840 to ·870.

Melts at 95° to 105° F. (35° to 40·5° C.), or even somewhat higher; volatilizes without giving acrid vapours, and burns with a bright flame, leaving no residue.

Solubility.—Insoluble in Water, slightly soluble in Absolute Alcohol, freely in Ether, Chloroform, Benzol, Oil of Turpentine, the fixed and volatile oils.

It is not saponified by solutions of alkalies.

U.S. Petrolatum melting point 40° C. to 51° C. (104° F. to 125° F.), the first constituting the softer and the second the firmer variety. When Petrolatum is ordered, without specifying the melting point, that which liquefies at about 40° C. is to be dispensed.

Tests.—If 5 grms. be digested for half hour with 5 grms. of Soda and 25 grms. of Water, the aqueous layer separated and supersaturated with diluted Sulphuric Acid, no oily substance should separate (absence of fixed oils or fats of vegetable or animal origin, or of resin).

When liquefied and agitated with Sulphuric Acid (sp. g. 1·540) should not acquire a dark colour within two hours (absence of readily carbonised organic impurities.)

(Austr., Vaselinum; Belg., Paraffina Mollis; Dutch, Vaselinum Album and V. Flavum; Fr., Pétroléine; Ger., Ung. Paraffini; Hung. and Span., Vaselina; U.S., Petrolatum; not in the others.)

Used in the preparation of Ungnentum Acidi Borici, U. Acidi Carbolici, U. Acidi Salicylici, U. Eucalypti, U. Glycerini Plumbi Subacetatis, U. Hydrargyri Oxidi Rubri, U. Hydrargyri Nitratis Dilutum, U. Potassæ Sulphuratæ, U. Sulphuris Iodidi, U. Veratrinæ, U. Zinci Oleati.

Not Official.

PARAFFINUM LIQUIDUM (Belg., Dutch, Ger).—A limpid, oily liquid, neutral reaction, without odour, taste, and fluorescence.

Sp. g. ·840. Boils above 360° C.

It dissolves Bromine, Iodine, Iodoform, and Phosphorus; also Ether, Chloroform, fixed and essential Oils, Eucalyptol, Menthol, and Thymol.

Test.—When treated with Sulphuric Acid, by constant agitation in a water-bath for one day, it should not become coloured.

Medicinal Properties.—It has been used, alone or mixed with Castor or Olive Oil, as an application in chronic eczema accompanied by desquamation. Has been recommended as a base for the hypodermic administration of those substances which it dissolves.

Not Official.

PARALDEHYDE.

$C_6H_{12}O_3$.

A colourless liquid of peculiar odour and pungent taste. Its vapour density is three times that of Aldehyde (C_2H_4O). Its specific gravity is 0·998.

A good commercial sample should be free from acidity, it should begin to freeze at 50° F. and be solid at 48° F., and all but a small fraction should distil between 250° and 252° F.

Solubility.—1 in $8\frac{1}{2}$ of Water; in all proportions of Alcohol and Ether.

(Hung.; not in the other Pharmacopœias.)

Medicinal Properties.—Hypnotic. Gives quiet and refreshing sleep. Has a marked action on the kidneys, increasing the flow of urine. It does not give rise to headache. Is a valuable remedy in mania, melancholia, and other nervous affections accompanied by sleeplessness.

Paraldehyde is given off by the lungs, and may be detected in the breath twelve or more hours after having been taken.

It has a depressant effect more on the respiratory centre than on the heart. It is antagonised by Strychnia.

Dose.—30 to 60 (or even 90) minims dissolved in 1 oz. to 2 oz. of water. A smaller dose repeated in an hour is more effective than a large dose. It has a pungent taste, which may be lessened by the addition of Tincture of Orange and Syrup; it is also given in gin at night. When larger doses than will dissolve are required in mixtures, Compound Tragacanth Powder should be ordered to diffuse it.

References.—*B.M.J.* '83, i. 215; *L.* '85, i. 201; *B.M.J.* '85, ii. 99; *B.M.J.* '89, i. 119 & 515; *L.* '89, ii. 15.

METALDEHYDE.—Like Paraldehyde it is a polymer of Aldehyde (C_2H_4O.), but its formula is uncertain. It is formed under rather uncertain conditions by the influence of cold upon Aldehyde containing a trace of mineral acid. It occurs in colourless acicular crystals insoluble in Water and sparingly in Alcohol and Ether. It sublimes readily, with partial conversion into ordinary Aldehyde. It is said to be a hypnotic.

PAREIRÆ RADIX.

PAREIRA ROOT.

The dried root of *Chondodendron tomentosum*.

Imported from Brazil. A good deal of the stem, which closely resembles the root, is also imported, and is said to be much less efficacious. Several drugs have been sold at different times as Pareira Brava.

(Port., Butua ; U.S. ; not in the other Pharmacopœias.)

Medicinal Properties.—Tonic and diuretic. In calculous affections, chronic inflammation, and ulceration of the kidneys and bladder : strongly recommended by the late Sir B. Brodie for its action on the mucous membrane of the bladder.

Dose.—Of the powder, 30 to 60 grs.
Best prescribed with Opium.

Preparations.

DECOCTUM PAREIRÆ.

Pareira Root, in No. 20 powder, 1¼ ; Distilled Water, 20 : boil fifteen minutes, and strain ; add water to measure 20. =(1 in 16).

Quantity of Pareira reduced from 1½ to 1¼.

(Not in the other Pharmacopœias.)

Dose.—1 to 2 oz. three or four times a day.

EXTRACTUM PAREIRÆ.

Pareira Root, in No. 40 powder, 1 ; boiling Distilled Water, 10, or a sufficiency : digest the Pareira with 1¼ of water for twenty-four hours, then pack in a percolator, and add water, till, by slow percolation, 10 has passed through, or the Pareira is exhausted. Evaporate by a water bath to a pilular consistence.

Dose.—10 to 30 grs.

EXTRACTUM PAREIRÆ LIQUIDUM.

Dissolve 4 of Extract of Pareira in a sufficient quantity of a mixture, of 1 of Rectified Spirit and 3 of Water, to form 16 of Liquid Extract. Filter if necessary. =(1 Extract in 4).

It is now made with Extract of Pareira, which makes it more uniform in strength.

Dose.—½ to 2 drms. or more.

(U.S., 1 in 1 with glycerine.)

Incompatibles.—The persalts of Iron, Salts of Lead, Tincture of Iodine.

PEPSIN.

PEPSIN.

A preparation of the mucous lining of a fresh and healthy stomach of the pig, sheep, or calf.

The stomach of one of these animals recently killed having been cut open and laid on a board with the inner surface upwards, any adhering portions of food, dirt, or other impurity, are to be removed, and the exposed surface slightly washed with cold water ; the cleansed mucous membrane is then to be scraped with a blunt knife or other suitable instrument, and the viscid pulp thus obtained is to be immediately spread over the surface of glass or glazed earthenware, and quickly dried at a temperature not exceeding 100° F. (37·8° C.). The dried residue is to be reduced to powder and preserved in a stoppered bottle.

A light yellowish-brown powder, having a faint but not disagreeable odour, and a slightly saline taste, without any indication of putrescence.

Very little soluble in Water or Spirit.

The usual solvent for fluid preparations of Pepsine is a weak Spirit acidulated with Hydrochloric Acid, to which Glycerine is sometimes added.

Tests.—Two grains of it, with an ounce of Distilled Water, to which five minims of Hydrochloric Acid have been added, form a mixture in which at least 100 grains of hard-boiled white of egg (passed through wire gauze of 36 meshes per linear inch, and made of No. 32 brass or copper wire) will dissolve on their being well mixed, digested, and well stirred together for about thirty minutes, at a temperature of 130° F. (54·4° C.).

We recently examined 26 samples, including all the well-known brands, English, Continental, and American. The shortest time by the test above was 18 minutes, four were complete in 20 minutes, six more in 30 minutes, four of the remainder were practically inert.

Dose.—2 to 5 grains.

Pepsin is one of the soluble ferments or enzymes of the gastric juice. It dissolves natural proteids, albumens, and fibrin, and converts them into syntonin and subsequently into albumose and peptone. It is a conversion of the less soluble proteids into those which are more so, peptone being the most soluble and diffusable of the proteids. Pepsin has no action on starch.

It acts only in acid solution, ·2 p.c. of Hydrochloric Acid being the most favourable.

The action of Pepsin will continue almost indefinitely if the products of its action are removed by dialysis, or if the concentration of the products is reduced by acidified water.

The gastric juice also contains another enzyme "rennin," which curdles milk. The curd is formed in acid or neutral solutions in the presence of Phosphate of Lime. The casein is split up into a soluble and an insoluble proteid, the latter of which entangles the fat and forms a curd.

The importance of Pepsin in aiding digestion has been justly valued by the profession for a very long period; before the method of preserving it was discovered, the scrapings of calves' stomachs were employed when gastric juice was found to be deficient.

When Sir James Clark went to the French Exhibition in 1855 with her Majesty he brought over with him some Pepsine made by M. Boudault, in connection with the experiments of Dr. Corvisart, which enabled the medical men of this country to give it a trial; it has been therefore an established remedy for more than thirty years.

(Austr., Belg., Dutch, Fr., Ger., Hung., Port., Russ., Span., Swiss, and U.S.; not in the others.)

Not Official.

PHENACETIN.

Syn. PARA-ACETPHENETIDIN.

A white crystalline tasteless powder. Melts at 135° C. (275° F.)

When heated with Alcohol and Sulphuric Acid, Acetic Ether is formed, which may be recognised by the odour.

Solubility.—Insoluble in Water; 1 in 30 of Rectified Spirit; 1 in 100 of Proof Spirit.

Medicinal Properties.—Antipyretic and analgesic. It does not appear to affect healthy persons, but even in small doses it relieves pyrexia. The fall and subsequent rise of temperature are gradual. It does not produce nausea. It has been recommended for the relief of neuralgia.—*L.* '88, i. 489; *B.M.J.* '88, i. 1126; *L.* '88, ii. 322; *B.M.J.* '89, ii. 1417.

Dose.—8 to 12 grains given in a single dose preferably to frequent smaller doses. It is given in cachets or suspended with Compound Powder of Tragacanth.

PHOSPHORUS.

PHOSPHORUS.

P, eq. 31.

A non-metallic element obtained from bones.

A semi-transparent colourless wax-like solid, which emits white vapours when exposed to the air.

Sp. g. 1·770. Melts at 110° F. (43·3° C.), and ignites in the air at a temperature a little above its melting point.

It should always be handled with caution and be cut under water.

Solubility.—Slightly soluble in pure Ether; 1 in 25 of Chloroform; 2 in 1 of Bisulphide of Carbon, about 1 in 60 of Olive Oil; also in melted fats; sparingly in boiling Rectified Spirit; insoluble in water.

(Belg., Dan., Dutch, Fr., Ger., Norw., Port., Russ., Span., Swed., Swiss, and U.S.; not in Austr. or Hung.)

Medicinal Properties.—Given as a nervine tonic; it acts as a powerful general stimulant. Poisonous doses affect principally the kidneys and liver, leading to fatty structural changes. The preparations are Oleum and Pilula Phosphori, and it has been combined with Cod-Liver Oil and other menstrua; but it should be given with caution.

The Hypophosphites of Sodium and of Calcium are other forms of giving loosely combined Phosphorus.

Used for making Acidum Phosphoricum Concentratum.

Antidotes.—Emetics: Sulphate of Copper is both emetic and antidote: 3 grs. dissolved in Water every 5 minutes till vomiting is induced, then continue it in 1 gr. doses every ¼ hour, with 10 drops of solution of Acetate of Morphia if rejected. Half an ounce of Epsom Salt as a purgative. Demulcent drinks, but avoid oils and fats. *French* Oil of Turpentine is an antidote.

Preparations.

OLEUM PHOSPHORATUM.

Phosphorus, 16 grs.; Almond Oil, previously heated to 300° F. (149° C.) for 15 minutes and allowed to cool, and filtered, 4 oz.

Put them into a bottle capable of holding 4½ oz., and heat them in a water bath to 180° F. (82·2° C.) removing the stopper two or three times to allow the escape of expanded air, then frequently shake until dissolved. =(about 1 in 100).

This preparation is ⅓ stronger than that of B.P. 1874.

Dose.—5 to 10 mins.

(Belg., 1 and 100 Olive Oil; Fr. and U.S., 1 in 100 Almond Oil and Ether; Russ., 1 in 100 Almond Oil; not in the others.)

PILULA PHOSPHORI.

Phosphorus, 3 grs.; Balsam of Tolu, 120 grs.; Yellow Wax, 57 grs.; Curd Soap, 90 grains.

Put the Phosphorus and Balsam of Tolu into a mortar, previously half filled with hot water; when the Phosphorus is melted, and the Balsam has become sufficiently soft, rub them together beneath the surface of the water until no particles of Phosphorus are visible, the temperature being maintained at or near 140° F. (60° C.) Add the Wax, and when it softens blend the whole thoroughly together. Should be kept immersed in water. When dispensed, every 2 grs. of the product is to be incorporated with one grain of Curd Soap, a few drops of Rectified Spirit being used, if necessary, to soften the whole. 3 grains of the mass (including Soap) $=\frac{1}{30}$ grain of Phosphorus. =(1 in 90).

Dose.—2 to 4 grs.

(U.S., $\frac{1}{100}$th grain of Phosphorus in each pill: not in the others.)

Not Official.

ELIXIR PHOSPHORI (*B.P.C.*).—Compound Tincture of Phosphorus, 1; Glycerine, 4: add the Tincture to the Glycerine, with agitation; should be preserved from the light. Each fluid drachm contains $\frac{1}{50}$ grain of Phosphorus.

Dose.—15 to 60 minims.

TINCTURA PHOSPHORI COMPOSITA (*B.P.C.*).—Phosphorus, 12 grs.; Chloroform, 2½ ozs.: place in a stoppered bottle and apply the heat of a water-bath until dissolved. Then add the solution to Ethylic Alcohol 12½ ozs. Shake well. This tincture should be preserved from the light in accurately stoppered bottles. Each fluid drachm contains $\frac{1}{10}$ grain of Phosphorus.

Dose.—3 to 12 minims.

PILULA PHOSPHORI C. SEVO.—Phosphorus, 10 grs.; Mutton Suet, 500 grs. Powdered Liquorice, 290 grs.; Powdered Mastic, 100 grs. Melt the Suet, add the Phosphorus, digest with agitation over a water bath till dissolved, now pour the Solution on to the powder previously well mixed and thoroughly dried, and place in a stoppered bottle, standing in very hot water, so that the melted suet is not chilled, but readily mixes by violent agitation with the powder. When divided into 3-grain pills, each pill contains $\frac{1}{30}$th of a grain of Phosphorus.

Not Official.

PHYSALIS ALKAKENGI.

WINTER CHERRY.

The Solanum Vesicarium of the old dispensatories.

The ripe berries are full of seeds; they yield half their weight in juice.

(Fr., Alkékenge; not in the others.)

TINCTURA PHYSALIS.—Dried Berries, 2; Proof Spirit, 8: digest 7 days. Diuretic, febrifuge. **Dose.**—1 to 2 fl. drs.

PHYSOSTIGMATIS SEMEN.

CALABAR BEAN.

The dried seed of *Physostigma venenosum*, Western Africa.

It yields its virtues to Alcohol, and imperfectly to Water.

The cotyledons when moistened with Solution of Potash become a pale yellow.

28 lbs. of Calabar Beans yielded 2·07 per cent. of extract by the B.P. process: this extract yielded 5·74 per cent. of alkaloids, which is equal to nearly ·12 per cent. of alkaloids in the Beans.

The same powder treated with boiling Rectified Spirit in an exhaustion apparatus yielded 4·66 per cent. of extract; which extract yielded 3·2 per cent. of alkaloids, which is equal to nearly ·15 per cent. of alkaloids in the Beans.

Dose.—In powder, 1 to 4 grs.

(Belg., Semen Calabariense; Dan., Dutch and Russ., Semen Physostigmatis; Fr., Fève du Calabar; Port., Fava do Calabar; Span., Haba del Calabar; Swed., Semina Calabar; U.S., Physostigma; not in the others.).

Stimulates the liver, but not powerfully unless given in large doses.—Dr. Rutherford.

Medicinal Properties.—Contracts the pupil; excites muscular spasm, followed by relaxation. Increases most of the secretions, and has been recommended in atony of the bowels. An interesting account of *Traumatic Tetanus* being cured by Calabar Bean, $\frac{1}{8}$ gr. of the Extract given every hour, increasing the dose according to symptoms.—*L.* '67, i. 265; *L.* '68, i. 434, 463.

Preparation.

EXTRACTUM PHYSOSTIGMATIS.

Calabar Bean, in No. 40 powder, 1; Rectified Spirit, 5: macerate the bean for forty-eight hours in one-fourth of the spirit in a closed vessel, agitating occasionally, then transfer to a percolator, and when the fluid ceases to pass, add the remainder of the spirit, so that it may slowly percolate through the powder; subject the residue of the bean to pressure, adding the pressed liquid to the product of the percolation, filter, distil off most of the spirit, and evaporate what is left in the retort by a water bath to the consistence of a soft extract.

Dose.—$\frac{1}{16}$ to $\frac{1}{4}$ gr. three times daily.

For subcutaneous injection, $\frac{1}{3}$ gr. in 10 mins. of water for tetanus.

(Belg., Dan., Fr., Port., Span., Swed., Swiss and U.S.; Dutch, with 5 p.c. of Glycerine; Russ., with Spirit, Water, and Acetic Acid.; not in the others.)

Not Official.

TINCTURA PHYSOSTIGMATIS.—Calabar Bean, in coarse powder, 1; Rectified Spirit, 5: digest fourteen days.

Dose.—10 minims, gradually increasing.

(Fr., 1 and 5; Dan. and U.S., 1 and 10; not in the others.)

PHYSOSTIGMINA.

PHYSOSTIGMINE.

Syn. ESERINE.

$C_{15}H_{21}N_3O_2$, eq. 275.

An alkaloid obtained from the alcoholic extract of Calabar Bean by dissolving the extract in Water, adding Bicarbonate of Sodium, shaking the mixture with Ether, and evaporating the ethereal liquid.

Colourless or pinkish crystals. This alkaloid and its salts are liable to become pink.

Solubility.—1 in 350 of Water, 1 in 2 of Rectified Spirit; readily soluble in dilute Acids.

(Fr.; not in the other Pharmacopœias.)

Medicinal Properties.—Physostigmine and its salts are used to contract the pupil.

Preparation.

LAMELLÆ PHYSOSTIGMINÆ.

Discs of Gelatine, with some Glycerine, each weighing about $\frac{1}{50}$ gr., and containing $\frac{1}{1000}$ gr. of Physostigmine.

Books of Calabar paper and of gelatine, with divided squares, are used by oculists to contract the pupil of the eye (after the use of Belladonna), in order to bring back the vision to the normal state.

Not Official.

PHYSOSTIGMINÆ HYDROBROMAS.—In fibrous masses, non-deliquescent, very soluble in water.

(Fr.; not in the other Pharmacopœias.)

PHYSOSTIGMINÆ SALICYLAS.—*Syn.* Eserinæ Salicylas.

Colourless acicular crystals, becoming coloured on exposure to light and air. Soluble 1 in 130 of Water; 1 in 15 of Rectified Spirit.

(Austr., Dutch, Ger., Hung. and U.S.; not in the others.)

PHYSOSTIGMINÆ SULPHAS.—*Syn.* Eserinæ Sulphas.

An amorphous powder, very deliquescent and very soluble in Water.

(Belg., Fr. and Span.; not in the other Pharmacopœias.)

GUTTÆ PHYSOSTIGMINÆ (*L.O.H.*).—Sulphate of Physostigmine, 2 grs. Water, 1 oz.

GUTTÆ PHYSOSTIGMINÆ FORTIORES (*L.O.H.*).—Sulphate of Physostigmine, 4 grs.; Water, 1 oz.

GUTTÆ PHYSOSTIGMINÆ CUM COCAINA (*L.O.H.*).—Sulphate of Physostigmine, 1 gr.; Hydrochlorate of Cocaine, 5 grs.; Water, 1 oz.

Not Official.

PHYTOLACCÆ RADIX, U.S.

POKE ROOT.

The fluid Extract has been recommended for inflamed and painful mammæ, internally and as a local application.—*B.M.J.* '87, ii. 844.

It has also been used in orchitis.—*T.G.* '85, 622.

It is emetic, purgative, and slightly narcotic.

EXTRACTUM PHYTOLACCÆ FLUIDUM (*U.S.N.F.*).—1 minim is equal to one grain of the drug.

PHYTOLACCIN.—An eclectic remedy. Hepatic and alterative, $\frac{1}{4}$ to $\frac{1}{2}$ grain; purgative, 2 to 4 grains.

Is a powerful hepatic stimulant; it also slightly stimulates the intestinal glands.—Dr. Rutherford.

Not Official.

PICROTOXINUM.

A neutral principle, prepared from the seeds of *Anamirta paniculata*, more commonly known as *Cocculus Indicus*.

Colourless, prismatic crystals, having a neutral reaction and a very bitter taste.

Solubility.—1 in 150 of Water, 1 in 10 of Rectified Spirit.

(Fr. and U.S.; not in the others.)

Dose.—$\frac{1}{60}$ grain as a remedy against immoderate sweating in phthisis.—*B.M.J.* '80, i. 96; *B.M.J.* '85, ii. 610. $\frac{1}{8}$ to $\frac{1}{6}$ grain given in epilepsy.—*L.M.R.* '87, 155.

On account of its bitterness, it has been fradulently used as a substitute for Hop in Beer, which is the more objectionable because of its poisonous properties.

Antidote.—Chloral and Picrotoxine are mutually antagonistic.

PILOCARPINÆ NITRAS.

NITRATE OF PILOCARPINE.

$C_{11}H_{16}N_2O_2$, HNO_3, eq. 271.

The nitrate of an alkaloid obtained from extract of Jaborandi by shaking it with Chloroform and Alkali, evaporating the Chloroformic Solution, neutralizing the product with Nitric Acid, and purifying by recrystallization.

A white crystalline powder or in acicular crystals.

Solubility.—1 in 5 of Water; 1 in 50 of Rectified Spirit.

Tests.—Strong Sulphuric Acid forms with it a yellowish solution, which on the addition of Bichromate of Potassium gradually acquires an emerald-green colour. It leaves no ash when burned with free access of air.

(Span.; not in the others. Fr., Pilocarpine. *See below* Pilocarpinæ Hydrochloras.)

Medicinal Properties.—A powerful diaphoretic and sialagogue. Is useful in the uræmic stage of Bright's disease. It should be used with caution in cases of weak heart. It contracts the pupil of the eye.

B. P. Dose.—$\frac{1}{20}$ to $\frac{1}{2}$ gr.

$\frac{1}{20}$ grain three times a day given to moisten the mouth in diabetes and diminish thirst.—*L.* '84, ii. 275. A case of convulsions during pregnancy treated by hypodermic injections, $\frac{1}{3}$ grain of Hydrochlorate of Pilocarpine.—*L.* '85, i. 1079; *L.* '86, i. 635, 1016. Useful in certain cases of deafness, especially of syphilitic origin, *B.M.J.* '85, i. 1192; '89, i. 471, and '89, ii. 220; *L.* '89, ii. 643. In jaundice, *L.* '89, i. 1157. In uræmia, *B.M.J.* '88, i. 188; as a galactagogue, *L.*' 85, ii. 885.

Not Official.

GUTTÆ PILOCARPINÆ (*L.O.H.*).—Nitrate of Pilocarpine, 2 grs.; Distilled Water, 1 oz.

INJECTIO PILOCARPINÆ NITRATIS (*L.O.H.*).—Nitrate of Pilocarpine, 1 gr.; Water, 20 mins.

PILOCARPINÆ HYDROCHLORAS.—Minute white crystals, deliquescent, neutral. Very soluble in Water and Rectified Spirit.

(Austr., Belg., Dutch, Ger., Hung. and U.S.; not in the others.)

PILULÆ.

PILLS.

This class of medicine, so convenient and portable, was introduced in the earliest Pharmacopœias, and some of them remain unchanged to the present day. We may mention the Pilula Rufi, which has for at least two hundred years maintained the same proportions, and is now called Pil. Aloes et Myrrhæ. Pills have been rolled in flour, starch, magnesia, liquorice powder, and in lycopodium; also, enveloped in silver leaf, and more recently coated with Ethereal Solution of Tolu or with Gelatine or French chalk for the purpose of preventing them from becoming dry and hard, as well as to shield them from the palate, and so prevent their being tasted. When pills are intended to pass through the stomach, as in the case of Aloes, so as to act entirely on the lower bowels, they are made up with Alcohol, and varnished with a solution of Keratine.

The following are contained in the British Pharmacopœia, the formulas for which will be found under the names of the substances from which they are prepared:—

	Proportions of active ingredient in the mass.
PILULA ALOES BARBADENSIS	1 in 2.
PILULA ALOES ET ASAFŒTIDÆ	Aloes 1, Asafœt. 1 in 4.
PILULA ALOES ET FERRI	Aloes 1, Iron $\frac{3}{4}$ in $5\frac{1}{4}$.
PILULA ALOES ET MYRRHÆ	Aloes 1, Myrrh $\frac{1}{2}$ in 3.
PILULA ALOES SOCOTRINÆ	1 in 2.
PILULA ASAFŒTIDÆ COMPOSITA	Asafœt. 1, Galb. 1 in $3\frac{1}{2}$.
PILULA CAMBOGIÆ COMPOSITA	about 1 in 6.
PILULA COLOCYNTHIDIS COMPOSITA	Col. 1, Aloes 2, Scam. 2 in 6.
PILULA COLOCYNTHIDIS ET HYOSCYAMI	Pil. Col. Co. 2 Ext. Hyos. 1. } in 3.

	Proportions of active ingredient in the mass.
PILULA CONII COMPOSITA	Ext. 2½, Ipec. ½ in 3.
PILULA FERRI CARBONATIS	Saccharo-Carbonate 1 in 1¼.
PILULA FERRI IODIDI	Iodide of Iron 1 in 3½.
PILULA HYDRARGYRI	Mercury 1 in 3.
PILULA HYDRARG. SUBCHLORIDI COMPOSITA	1 Calomel in 5.
PILULA IPECACUANHÆ CUM SCILLA	3 Dover's Powder in 7.
PILULA PHOSPHORI	In 3-gr. Pills, each Pill containing $\frac{1}{30}$ gr. of Phosphorus.
PILULA PLUMBI CUM OPIO	Acet. Lead 6, Opium 1 in 8.
PILULA RHEI COMPOSITA	Rhubarb 3, Aloes 2¼ in 10.
PILULA SAPONIS COMPOSITA	1 Opium in 6 nearly.
PILULA SCAMMONII COMPOSITA	Resin Scam. 1, Resin Jalap 1 in 3¼.
PILULA SCILLÆ COMPOSITA	Squill 1 in 5.

N.B.—The usual dose of all pills is from 5 to 10 grains, unless otherwise directed.

When the penny-post commenced, pills were sent in flat wooden boxes, but were very frequently smashed by the obliterating stamps; the Author therefore had a pillar left in the centre, to act as a bridge, and support the lid from side to centre; this answered perfectly, and pills have thus been sent per post safely up to the present time.

PIMENTA.

PIMENTO.

The dried unripe full-grown fruit of *Pimenta officinalis*.

From the West Indies.

(Port., Pimenta da Jamaica; Span., Pimienta de la Jamaica; U.S.; not in the other Pharmacopœias.)

Medicinal Properties.—A warm aromatic stimulant, like Cloves; used as an adjuvant to tonics and purgatives.

Dose.—10 to 30 grs. in powder.

Preparations.

AQUA PIMENTÆ.

Pimento, bruised, 7; Water, 160: distil one-half. =(1 in 11½).

Dose.—1 to 2 oz.

(Not in the other Pharmacopœias.)

OLEUM PIMENTÆ.

The Oil distilled in Britain from Pimento. Sp. g. 1·02.

Solubility.—In all proportions of Rectified Spirit; about 1 in 50 of Proof Spirit.

When shaken with an equal volume of Solution of Ammonia it forms a soft yellow crystalline mass. This also is the case with Oil of Cloves and partially so with Oil of Cinnamon.

1 minim dissolved in 60 minims of Rectified Spirit, and treated with 1 minim of a very dilute Solution of Ferric Chloride, turns a fine indigo blue colour. This is also the case with Oil of Cloves, which Oil of Pimento very much resembles in chemical constitution.

Dose.—1 to 3 minims, on sugar, in pill, or emulsion.

(U.S.; not in the other Pharmacopœias.)

Not Official.

PINI PUMILIONIS OLEUM.

An oil distilled from the fresh leaves and young shoots of *Pinus pumilio*, Mountain Pine.

This is also sold under the names "Pinol" and "Pumilino."

Sp. g. about ·868. All but a small fraction distils between 330° and 350° F.

Solubility.—About $\frac{4}{5}$ dissolves 1 in 5 of Rectified Spirit, but the remaining $\frac{1}{5}$ is much less soluble.

(Austr.; not in the other Pharmacopœias.)

Medicinal Properties.—The vapour is a mild stimulant in chronic catarrhal affections. It is also applied externally in rheumatism. Internally the dose is 1 to 5 minims.

EXTRACTUM PINI PUMILIONIS.—A liquid extract, of a brown colour, prepared from the young shoots of the Mountain Pine. It is used in baths.

PINI SYLVESTRIS OLEUM.

FIR-WOOL OIL.*

The oil distilled from the fresh leaves of *Pinus sylvestris.*

Colourless, or nearly so, with an agreeable odour.

Sp. g. ·870.

Solubility.—1 in $7\frac{1}{2}$ of Rectified Spirit; in all proportions of Absolute Alcohol.

(Hung., sp. g. ·872; Russ., Oleum Pini Foliorum, sp. g. ·880; not in the others.)

Medicinal Properties.—It is used externally in rheumatism, and as an inhalation with hot water in chronic laryngitis.

Preparation.

VAPOR OLEI PINI SYLVESTRIS.

Fir-wool oil, 40 minims; Light Carbonate of Magnesium, 20 grains; Water to 1 ounce: mix.

One fluid drachm in a pint of water at 140° F. for each inhalation.

PIPER NIGRUM.

BLACK PEPPER.

The dried unripe fruit of *Piper nigrum,* chiefly from the East Indies.

The ash of genuine Black Pepper varies from 4 to 6 p.c. (*Blyth*).

(Belg.; Fr., Poivre Noir; Port., Pimenta; Span., Pimisuta Nigra; U.S.; not in the other Pharmacopœias.)

Medicinal Properties.—A warm carminative stimulant, producing general arterial excitement. Chiefly used to excite the languid stomach and correct flatulence. Acts on the mucous membrane of the rectum, whence it is useful in hæmorrhoids; also on the membrane of the urethra, similarly to Cubebs. In intermittents it may be used as an adjuvant to more powerful febrifuges, as with drunkards, when the stomach is not acted upon by Quinine.

Dose.—5 to 20 grs. in powder.

Contained in Confectio Opii and Pulvis Opii Compositus.

Preparation.

CONFECTIO PIPERIS.

Black Pepper, in fine powder, 2; Caraway fruit, in fine powder, 3; Clarified Honey, 15: triturate. =(1 in 10).

Dose.—60 to 120 grs.

(Not in the other Pharmacopœias.)

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* This is a registered Trade Mark.

Not Official.

OLEO-RESINA PIPERIS (U.S.)—Obtained from Pepper by exhaustion with Ether, and separation from the Piperine.

This represents the virtues of Pepper.

Dose.—¼ to 1 minim, given in emulsion or in pill.

PIPERINA (U.S.).—A proximate principle of feebly alkaloidal power prepared from Pepper.

It possesses antipyretic properties, but it is not the active principle of Pepper.

Dose.—2 to 8 grains.

In intermittent fever.—*B.M.J.* 86, ii. 449, 613.

Not Official.

PISCIDIA.

Syn. Jamaica Dogwood.

The bark of the root of *Piscidia erythrina.*

The shrub is a native of South America and the West Indies, where it has been used for stupefying fish.

Medicinal Properties.—Narcotic and Anodyne. Has been used in neuralgia. —*P.J.* xvi. 1014.

Has been found useful in nervous debility and nervous irritability.—*T.G.* '88, 102.

EXTRACTUM PISCIDIÆ LIQUIDUM.—1 minim = 1 grain.

Dose.—30 to 120 minims.

PIX BURGUNDICA.

BURGUNDY PITCH.

A resinous exudation from the stem of the *Pinus Picea* (*Abies excelsa*), melted and strained; imported from Germany.

Solubility.—Almost entirely dissolves 1 in 20 of Rectified Spirit; the greater part dissolves 1 in 1½ of Glacial Acetic Acid.

(Belg.; U.S.; Dan., Norw., Swed., Resina Pini Flava; Fr., Poix de Bourgogne; Hung., Resina Pini Burgundica; Port., Pez de Borgonha; Span., Russ. and Swiss, Resina Pini.; not in Austr., Dutch, or Ger.)

It is the Thus or Frankincense of Lond. and Dub. Pharmacopœias, which exudes from the spruce fir, and when melted and strained is called Burgundy Pitch.

Preparation.

EMPLASTRUM PICIS.

Burgundy Pitch, 26; Common Frankincense (Thus Americanum), 13; Resin, 4½; Yellow Wax, 4½; Expressed Oil of Nutmeg, 1; Olive Oil, 2; Water, 2: add the Oil and the Water to the other ingredients, previously melted together; stir, and evaporate to a proper consistence.

Medicinal Properties.—Applied to the chest in chronic pulmonary complaints, to the loins in lumbago, to the joints in chronic articular affections, and to other parts to relieve local pain of a rheumatic character. It acts as a counter-irritant.

(U.S., Yellow Wax 1, Burgundy Pitch 9; Belg., Fr., Port., Span., and Swiss, Yellow Wax 1, Burgundy Pitch 3; Dan. (Emplastrum Citrinum), Resina Pini Flava 6, Yellow Wax 4, Suet 2, Turpentine 1; Swed., Resina Pini Flava 6, Pitch 4, Yellow Wax 2, Venetian Turpentine 1; Russ. (Emplastrum Resina Pini), Resin 2. Yellow Wax 4, Beef Suet 1, Turpentine 1; not in Austr., Dutch, or Ger.)

Not Official.

PIX CARBONIS LIQUIDA PRÆPARATA.

PREPARED COAL TAR.

Place commercial coal tar in a shallow vessel and heat for one hour at 120° F., stirring frequently.

(B.P.C.; Fr., Goudron de Houille; not in the others.)

Preparation.

LIQUOR PICIS CARBONIS (*B.P.C.*) and **EMULSION DE COALTAR** (Fr.).—Prepared Coal Tar 4; Tincture of Quillaia 20: digest at 120° F. for 2 days, allow to cool, decant or filter.

LIQUOR CARBONIS DETERGENS.—An alcoholic solution of Coal Tar, as obtained from the gas-works. It is almost black, smells strongly of Naphthalene, and is of light specific gravity. Used externally in skin diseases diluted about 1 in 20 of Water.

PIX LIQUIDA.

TAR.

A bituminous liquid obtained from the wood of *Pinus sylvestris* (known in this country as the Scotch Pine), and other Pines by destructive distillation.

Thick, viscid, and brownish black, with a peculiar odour. Water agitated with it acquires a yellowish tint and an acid reaction.

Solubility.—In less than its own bulk of Rectified Spirit or Chloroform, and separates on the addition of water; soluble 1 in 3 of Solution of Soda B.P.; slightly soluble in Olive Oil or Oil of Turpentine.

(In all the Pharmacopœias; Dan., Norw., and Swed., Pyroleum Pini; Fr., Goudron Végétal, obtained from *Pinus maritima*; Port., Alcatrao; Span., Brea.)

Medicinal Properties.—Similar to Turpentine. May be used internally in chronic catarrhal affections, and complaints of the urinary passages; also for some chronic skin diseases. As an external application in cases of lepra, &c. Is useful in chronic bronchitis, taken internally or inhaled from hot water.

Dose.—20 to 60 minims, in pills with flour.

Preparations.

UNGUENTUM PICIS LIQUIDÆ.

Tar, 5; Yellow Wax, 2: melt together and stir till cold.

Applied in cases of psoriasis and scald-head.

This ointment is too hard for use. A proper consistence is obtained by replacing half of the Yellow Wax with Almond Oil (see Not Official).

(Belg., Tar 1, Lard 4; Dan., Pitch 11, Lard 6, Carbonate of Potassium 3; Dutch (Ung Picis), Pix Solida 3, Resin 3, Yellow Wax 2, Olive Oil 12; Fr. (Pommade de Goudron), and Port., Tar 1, Lard 9; Span., Tar 8, Lard 30; Swiss (Ung. Picis), Pix Navalis 1, Lard 3; U.S., Tar 1, Suet 1: not in the others.)

Used to remove tetter and in tinca capitis.

Not Official.

UNGUENTUM PICIS MOLLE.—Tar, 5; Yellow Wax, 1; Almond Oil, 1: melt together and stir till cold.

AQUA PICIS (Tar Water).—Stir a pint of Tar with half a gallon of Water for fifteen minutes, and decant.

Dose.—From 1 to 2 pints daily, or may be used as a wash.

(Belg. (Aq. Picis Concentrata), Tar 50, Bicarbonate of Sodium 3, Water 200; and Aqua Picis is made with Aq. Picis Conc. 3, Water 97; Dutch, Tar 1, Water 20; Fr. (Eau de Goudron), Tar 1, Water 200, Pine Sawdust 3; Ger., Tar 1, Pumice 3, Water 10; Norw. (Aqua Pyrolei Pini), and Swed. (Infusum P. P.), 1 in 10; Port. (Agua de Alcatrao), 1 in 40; Span. (Agua de Brea), 1 in 24; Swiss, Tar 1, Boiling Water 5, then cold water 15; Russ., Birch Tar 1, Water 30: not in Austr., Dan., or U.S.)

CAPSULÆ PICIS.

Dose.—2 capsules, three or four times a day, as a stimulant and diuretic.

PIGMENTUM PICIS LIQUIDÆ (*B.S.H.*).—Tar 1; Rectified Spirit 1.

Used as a stimulant in cases of psoriasis and of chronic dry eczema. Its use in eczema demands caution.

PILULÆ PICIS.—Tar and Liquorice Powder, equal weights mixed, and made into five-grain pills.

Dose.—2 or 3 pills thrice daily.

They are sometimes made of Black Pitch, and have been taken to relieve hæmorrhoids.

SYRUPUS PICIS LIQUIDÆ (*U.S.*).—Upon Tar 6 pour Cold Water 12 and stir frequently for 24 hours; pour off the Water and throw it away. Pour Boiling Distilled Water 50 upon the residue, stir briskly for 15 minutes, and stir occasionally for 36 hours; decant the solution and filter. In 40 of the filtered solution dissolve sugar 60 without heat. This is about the same strength as Tar Water, but it can be increased by adding Alkali to the Water in which the residue is digested. It may be prescribed with Syrup of Wild Cherry Bark.—*B.M.J.* '88, i. 463, 569; *M.P.* '89, i. 213.

BLACK PITCH.—There are three kinds, Archangel, Swedish, and that obtained from Gas Tar; the latter is without odour. Pitch pills are sometimes recommended to increase the size and weight of the body.

Not Official.

PLUMBUM.

LEAD.

Pb, eq. 207.

Sp. g. 11·3; fuses at about 617° F (325° C.) Lead occurs in nature as an oxide, and as a sulphide called *galena;* also in saline combination, forming the native sulphate, phosphate, carbonate, chromate, molybdate, tungstate, and arseniate of lead. The native oxide is rare, but galena, the ore from which nearly all the lead of commerce is extracted, is exceedingly abundant.

Incompatibles.
Antidotes. } Are given after Plumbi Subacetatis Liquor.

PLUMBI ACETAS.

ACETATE OF LEAD.

Syn. SUGAR OF LEAD.

$Pb (C_2H_3O_2)_2 . 3H_2O$, eq. 379.

In white masses of interlaced acicular crystals, slightly efflorescent, having an acetous odour, and a sweet astringent taste.

Solubility.—1 in 2 of Water; 6 in 1 of boiling Water; 1 in 20 of Rectified Spirit; 1 in 2 of Glycerine.

Tests.—Its solution in Distilled Water is clear, or is only slightly turbid, and becomes clear on the addition of Acetic Acid, it gives a black precipitate with Hydrosulphuric Acid (Sulphide of Lead), insoluble in Hydrochloric Acid, a white with diluted Sulphuric Acid (Sulphate of Lead), soluble in hot solution of Acetate of Ammonia, and a yellow with Iodide of Potassium (Iodide of Lead), soluble in boiling Water, and crystallising on cooling in shining scales. When warmed with Sulphuric Acid, Acetic Acid is given off. 38 grains dissolved in water require for complete precipitation 200 grain-measures of the volumetric solution of Oxalic Acid.

(In all the Pharmacopœias; U.S.; Austr., Ger., and Swiss., Plumbum Aceticum; Hung. and Russ., Plumbum Aceticum Depuratum; Dan., Dutch, Norw., and Swed., Acetas Plumbicus; Belg., Acetas Plumbi; Fr., Acétate Neutre de Plomb; Port., Acetato de Chumbo; Span., Acetato Plumbico.)

Medicinal Properties.—In small doses it is sedative and astringent, lessening morbid mucous discharges and hæmorrhages, and even diminishing natural secretions; whence it is useful in chronic diarrhœa and dysentery. Used in phthisis to check expectoration; in bronchitis to abate profuse secretion. Its use requires caution. It is often followed by a small dose of Acetic Acid, as excess of Acid makes it less injurious to the system. Externally, it is sedative, desiccant, and astringent, diminishing profuse discharges of ulcers; also for injection in gonorrhœa.

In large doses somewhat lessens the secretion of bile, probably by direct action on the liver.—Dr. Rutherford.

Dose.—1 or 2 to 4 grs. in pill; also in solution, with excess of Acetic Acid.

Incompatibles.—Sulphuric and Tannic Acids, and their salts.

Antidotes.—Same as under Liq. Plumbi Subacetatis.

Preparations.

PILULA PLUMBI CUM OPIO.

Acetate of Lead, in fine powder, 6; Opium, in fine powder, 1; Confection of Roses, 1: mix.

A four-grain pill contains 3 grs. of Plumbi Acetas and ½ gr. Pulvis Opii.

Dose.—A four-grain pill every three or four hours for hæmorrhage.

(Port., Acetate of Lead, 5; Extract of Opium, 1; Extract of Liquorice, 14; not in the other Pharmacopœias.)

SUPPOSITORIA PLUMBI COMPOSITA.

Acetate of Lead in powder, 36; Opium in powder, 12; Oil of Theobroma, 132; rub the Acetate of Lead and Opium with 42 of the Oil of Theobroma in a slightly warmed mortar, and add them to the remainder of the Oil of Theobroma previously melted at a low temperature, mix them thoroughly, and pour the mixture while it is fluid into suitable moulds of the capacity of 15 grains.

The above in grains makes 12 suppositories.

Benzoated Lard and White Wax are now omitted.

Each suppository contains 3 grs. of Acetate of Lead and 1 gr. of Opium.

UNGUENTUM PLUMBI ACETATIS.

Acetate of Lead, in fine powder, 12 grs.; Benzoated Lard, 1 oz.: mix =(1 in 37½).

(Austr. and Hung., Acetate of Lead 3, Lard 150, White Wax 50, Water 10;

Dan., Acetate of Lead 5, Olive Oil 36, White Wax 9; Norw., Acetate of Lead 1, Olive Oil 14, Yellow Wax 5; Russ (Ceratum) Yellow Wax 12 Olive Oil 12, Acetate of Lead, levigated, 1; not in the others.)

Not Official.

LOTIO PLUMBI ACETATIS *L.O.H.*).—Acetate of Lead, 2 grs. Diluted Acetic Acid, 2 mins.; Water 1 oz.

PLUMBI CARBONAS.

CARBONATE OF LEAD.

Syn. CERUSSA.

A soft, heavy, white powder.

As no formula or method of preparation is given in the B.P. this may be assumed to be a pure commercial "White Lead," such as is used for painting. It is a mixed or combined Carbonate and Hydrate of Lead, and is very frequently adulterated with Sulphate of Barium.

Solubility.—Insoluble in water; soluble, with effervescence, in Diluted Nitric Acid and Acetic Acid.

Test.—Dissolves in Diluted Acetic Acid without leaving any residue, and the solution, when treated with excess of Sulphuretted Hydrogen, boiled, and filtered (all the Sulphide of Lead separated), gives no precipitate with Oxalate of Ammonium—indicating absence of Calcium.

(Austr., Hung., and Russ., Plumbum Carbonicum Belg., Ger., and Swiss, Cerussa; Dan., Norw., and Swed., Hydratocarbonas Plumbicus; Dutch, Carbonas Plumbicus; Fr., Carbonate de Plomb Port., Alvaiade; Span., Albayalde Cerusa; U.S., Plumbi Carbonas.

Medicinal Properties.—Employed externally as an astringent and sedative, or as an ointment for ulcers and inflamed and excoriated surfaces.

Preparation.

UNGUENTUM PLUMBI CARBONATIS.

Carbonate of Lead, in fine powder, 62 grs. Simple Ointment, 1 oz.: mix thoroughly. =(1 in 8).

(Austr., Dan., Hung., Norw., Russ., Swed., and Swiss, 1 in 3; Belg., 1 in $6\frac{1}{4}$; Dutch and Port., 1 in 5; Ger., 3 in 10; Span., 10 in 28; U.S., 1 in 10; Fr., Pommade de Carbonate de Plomb, 1 in 6.)

PLUMBI IODIDUM.

IODIDE OF LEAD.

PbI_2, eq. 461.

Nitrate of Lead, 4; Iodide of Potassium, 4; Distilled Water, a sufficiency: dissolve with heat, the Nitrate of Lead in 30 of water, and the Iodide of Potassium in 10 of water; mix the solutions, collect the precipitate on a filter, wash it with Distilled Water, and dry it with a gentle heat.

Solubility.—1 in 2000 of Water; 1 in 300 of boiling Water; soluble also in Solutions of Acetates, and of Chloride of Ammonium.

(U.S.; Belg., Ioduretum Plumbi; Fr., Iodure de Plomb; Ger., Russ., and Swiss, Plumbum Iodatum; Port., Iodato de Chumbo; Span., Ioduro Plumbico; Swed., Iodetum Plumbicum; not in the others.)

Medicinal Properties.—Used externally as a resolvent to chronic swellings.

Preparations.

EMPLASTRUM PLUMBI IODIDI.

Iodide of Lead, 1 ; Lead Plaster, 8 ; Resin, 1 : add the Iodide of Lead in fine powder to the Plaster and Resin previously melted at as low a temperature as possible, and mix them intimately. =(1 in 10).

Lead Plaster is now used in the place of Soap Plaster, and Resin in the place of Resin Plaster.

UNGUENTUM PLUMBI IODIDI.

Iodide of Lead, in fine powder, 62 grs. ; Simple Ointment, 1 oz. ; mix thoroughly. =(1 in 8).

(Fr., Port., and U.S., 1 and 9 ; Span., 4 and 30 ; not in the others.)

Not Official.

PESSUS PLUMBI IODIDI ET ATROPIÆ (*Lond. Hosp.*)—Iodide of Lead, 10 grs. Sulphate of Atropia, $\frac{1}{18}$ gr. ; (Gelatine) Basis, 60 grs.

IODIDE OF LEAD PLASTER MULL (Unna).—Contains $\frac{1}{2}$ gr. of Iodide of Lead to the square inch.

PLUMBI NITRAS.

NITRATE OF LEAD.

$Pb(NO_3)_2$, eq. 331.

Solubility.—1 in 2 of Water; 10 in 9 of boiling Water; sparingly in Rectified Spirit.

(Fr., Russ., Span., and U.S. ; not in the other Pharmacopœias.)

Used to produce Plumbi Iodidum.

PLUMBI OXIDUM.

Syn. Lithargyrum. 1864.

PbO, eq. 223.

In heavy scales of a pale brick-red colour.

Tests.—Soluble in diluted Nitric Acid and in Acetic Acid without effervescence. Its solution in diluted Nitric Acid, when supersaturated with Ammonia and cleared by filtration, does not exhibit a blue colour—indicating absence of Copper.

Absence of Iron is also important ; it sometimes contains Iron, and will not then make a white plaster.

(Austr., Hung., Russ., and Swiss, Plumbum Oxydatum ; Belg. and Ger., Lythargyrum ; Dan., Norw., and Swed., Oxydum Plumbicum ; Dutch, Oxydum Plumbicum Semivitreum ; Fr., Oxyde (Proto) de Plomb Fondu ; Port., Oxydo de Chumbo ; Span., Litargirio ; U.S., Plumbi Oxidum.)

Used chiefly for the manufacture of other lead preparations.

Preparations.

EMPLASTRUM PLUMBI.

Oxide of Lead, in very fine powder, 1 ; Olive Oil, 2 (by weight) ; Water, 1 : boil all the ingredients together gently by the heat of a steam-bath, and keep them simmering for 4 or 5 hours, stirring constantly until the product acquires the proper consistence for a plaster, adding more water during the process if necessary.

Contained in Emplastra Ferri, Galbani, Hydrargyri, Resinæ, and Saponis.

The plaster of former Pharmacopœias wanted adhesiveness. The British Pharmacopœia directs long boiling, which secures sufficient tenacity, and it now resembles the famous strapping-plaster of Dr. Scott, of Bromley. Care, however, must be taken to use Italian Oil; Gallipoli and Spanish oils will not make an adhesive plaster.

(Austr. and Hung., Empl. Diachylon Simplex, Litharge 1, Lard 2; Belg., Litharge 2, Olive Oil 2, Water 1, Lard 2; Dan., Litharge 5, Olive Oil 9, Water 1; Fr., Litharge 1, Lard 1, Olive Oil 1, Water 2; Dutch, Ger., Port., and Russ., Litharge 1, Lard 1, Olive Oil 1, Water *q.s.*; Norw., Span., and Swed., Litharge 1, Olive Oil 2, Water *q.s.*; Swiss, Litharge 10, Lard 9, Olive Oil 9, Water 2; U.S., Empl. Plumbi, Litharge 16, Olive Oil 30, Water *q.s.*)

Equal weight of Lead Plaster and Soap Plaster melted together is an excellent plaster for corns.

Not Official.

UNG. DIACHYLON. HEBRÆ (modified by Professor Kaposi).—Simple Lead Plaster, 1; Soft Paraffin, 1: melt with heat.

DR. PEARSON'S CERATE.—Lead Plaster 4, Yellow Wax 1, Oil of Almonds 3: melt and mix.

PLUMBI OLEAS.—Acetate of Lead, 280 grains; dissolve in Distilled Water, 40 ozs.; add slowly Solution of Oleate of Sodium, 20 ozs.; warm gently, wash by decantation, collect and dry.

Melted with equal parts of lard or lard oil to form an ointment.

PLUMBI SUBACETATIS LIQUOR.

SOLUTION OF SUBACETATE OF LEAD.

Syn. Liquor Plumbi Diacetatis. Goulard's Extract.

Subacetate of Lead, $Pb_2O(C_2H_3O_2)_2$, eq. 548; dissolved in water.

A dense, clear, colourless liquid, with alkaline reaction and sweet astringent taste.

Acetate of Lead, 5; Oxide of Lead, in powder, 3½; Distilled Water, 20: boil half an hour, constantly stirring; filter, and make 20.

Tests.—Sp. g. 1·275. 284·5 grs. by weight require for perfect precipitation 500 grain-measures of the volumetric solution of Oxalic Acid.

The test corresponds to 24 per cent. of the Subacetate of Lead.

(In all the Pharmacopœias; U.S., sp. g. 1·228; Austr., Hung. and Russ., Plumbum Aceticum Basicum Solutum, sp. g. 1·230—1·240; Belg., Subacetas Plumbi Liquidus, sp. g. 1·240; Dan., Norw. and Swed., Solutio Subacetatis Plumbici, sp. g. 1·170—1·175; Dutch, Solutio Acetatis Plumbici Basici, sp. g. 1·235—1·240; Fr., Sous-Acétate de Plomb Liquide, sp. g. 1·320; Ger., Liquor Plumbi Subacetici, sp. g. 1·235—1·240; Port., Soluto de Subacetato de Chumbo, sp. g. 1·260; Span., Acetato (sub) Plumbico Liquido, sp. g. not given; Swiss, Liquor Plumbi Acetici, sp. g. 1·236—1·240.)

Medicinal Properties.—When largely diluted, it is used externally as an astringent and sedative for inflammation arising from sprains, bruises, &c.; applied by means of cloths kept wet. As an astringent **gargle** (½ drm. to 6 oz. Rose Water).

Incompatibles.—Hard Water, Mineral Acids, and Salts, Vegetable Acids, Alkalies, Iodide of Potassium, all astringents, preparations of Opium, Mucilage of Acacia, Albuminous Liquids.

Antidotes.—Sulphate of Sodium, Epsom Salts, succeeded by emetics, and afterwards by Opium and liberal libations of Milk, or white of Egg mixed with water.

A course of Iodide of Potassium is useful in eliminating Lead from the system.

It is said that men who work in the lead mines, living chiefly on milk, are not subject to lead poisoning.

All workers in lead should wash their hands before meals.

L. '81, ii. 779, gives an unusual source of Lead poisoning, from shot found in a bottle full of Port wine; an appreciable quantity of Lead was found in solution.

Preparations.

GLYCERINUM PLUMBI SUBACETATIS.

Acetate of Lead, 5; Oxide of Lead in powder, 3½; Glycerine, 20; Distilled Water, 12: mix and boil a quarter of an hour; then filter and evaporate until the water is dissipated.

(Port., Solution 1, Glycerine 9; not in the others.)

LIQUOR PLUMBI SUBACETATIS DILUTUS. *Syn.* Goulard Water.

Solution of Subacetate of Lead, 1; Rectified Spirit, 1; Distilled Water, 78: mix and filter. =(1 in 80).

(Austr. and Hung. (Aqua Goulardi), Solution 2, Alcohol (70°) 5, Water 100, also Aqua Plumbica, Solution 1, Water 50; Belg. (Aqua Vegeto-Mineralis Goulardi), Solution 2, Alcohol (92°) 3·5, Water 100; Dan., Norw. and Swed. (Solutio Subacetatis Plumbici Diluta), Solution 2, Alcohol (60°) 8, Water 90; Dutch (Aqua Plumbi), Solution 1, Water 20; Fr. (Lotion dite de Goulard), Solution 2, Alcohol (60°) 8, Water 90; also (Lotion à l'Acetate de Plomb), Solution 1, Water 50; Ger. (Aqua Plumbi), Solution 1, Water 50; Port. (Aqua Saturnina Alcoolisada), Solution 2, Alcohol (85°) 8, Water 90; also (Aqua Saturnina), Solution 1, Water 50; Russ. (Aqua Plumbi Spirituosa), Solution 2, Alcohol (70°) 8, Water 90; also (Aqua Plumbi), Solution 1, Water 50; Span. (Agua Vegeto-Mineral), Solution 4, Alcohol (90°) 7, Water 345; Swiss (Aqua Goulardi Propria), Solution 1, Alcohol (90°) 1, Water 49; also (Aqua Plumbi), Solution 1, Water 50; U.S. (same name as Brit.), Solution 3, Water 100.)

UNGUENTUM GLYCERINI PLUMBI SUBACETATIS.

Glycerine of Subacetate of Lead, 1 (by weight); Soft Paraffin, 4; Hard Paraffin, 1⅓: melt the hard and soft Paraffins together, then add the Glycerine of Lead and stir till cold.

(Belg., Unguent. Subacetatis Plumbi, 1 in 3; Dutch, Ung. Plumbici Basici, 1 in 2; Fr., Cérat Saturné, 1 in 10; Ger., Unguentum Plumbi, 1 in 12½; Russ., 1 in 12; Swed., Ung. Subacetatis Plumbici, 3 in 20: Swiss, Ung. Plumbi, 1 in 10; U.S., Ceratum Plumbi Subacetatis, 1 in 5; not in the others.)

Not Official.

CREMOR LITHARGYRI.—Solution of Subacetate of Lead, 1; Cream, 7: mix. Useful as an application in eczema.

UNGUENTUM PLUMBI TANNICI.

Ger., Tannic Acid 1, Liquor Plumbi 2, Lard 17.
Hung., Tannic Acid 1, Liquor Plumbi 2, Vaseline 17.
Russ., Tannic Acid 1, Alcohol 2, Liquor Plumbi 6, Ung. Cerei 24.
Swiss, Tannic Acid 1, Alcohol 1, Liquor Plumbi 6, Ung. Simpl. 30.
Span., Tannate of Lead 1, Lard 15.
Belg., freshly precipitated Tannate of Lead 3, Glycerine of Starch 2.
Swed., freshly precipitated Tannate of Lead 2, Glycerine 1.

Belgian title is Glycerinum Tannatis Plumbi.

This preparation is recommended for bed-sores and sore nipples.

PODOPHYLLI RHIZOMA.

PODOPHYLLUM RHIZOME.

The dried rhizome and rootlets of *Podophyllum peltatum.*

Imported from North America.

(Belg., Dutch, Fr., Port., Span. and U.S.; not in the others.)

Medicinal Properties.—An active cholagogue and purgative. Applicable to cases where brisk purging is required; combined generally with Henbane.

Dose.—10 to 20 grs. in powder, but rarely used in England, the resin being generally prescribed.

Preparations.

RESINA PODOPHYLLI.

Podophyllum Rhizome, in No. 40 Powder, 1; Rectified Spirit, $3\frac{3}{4}$, or a sufficiency; Distilled Water, a sufficiency: exhaust the podophyllum by percolation with the spirit; distil off the greater part of the spirit; slowly pour the remaining liquid into three times its volume of water, constantly stirring; let it stand twenty-four hours; collect the resin which falls, wash on a filter with distilled water, and dry in a stove.

Hydrochloric Acid is now omitted from the process.

Solubility.—It forms a cloudy solution with Rectified Spirit and a clear one with Ammonia; about 60 per cent. dissolves in pure Ether.

Given in pills with Soap and Hyoscyamus, Rhubarb or Aloes.

A very powerful stimulant of the liver, and also of the intestine.—Dr. Rutherford.

Dose.—$\frac{1}{6}$ to $\frac{1}{2}$ or even 2 grs. have been given in obstinate cases, but it is best to begin with $\frac{1}{8}$; it may be prescribed with Aloes and Soap.

(Belg., Ger., Hung., Russ. and Swiss, Podophyllinum; Dutch, Norw., Port. and U.S., Resina Podophylli; Fr., Resine de Podophyllum Peltatum; Span., Podofilina; not in Austr. Dan. or Swed.)

TINCTURA PODOPHYLLI.

Resin of Podophyllum, 80 grains; Rectified Spirit, 10 oz.: dissolve and filter.

1 fluid drachm equals 1 grain of Podophyllin.

Dose.—15 to 30 minims.

(Not in any of the Foreign Pharmacopœias.)

Not Official.

TINCTURA PODOPHYLLI AMMONIATA.—Resin of Podophyllum, 24 grs. Rectified Spirit, 2 oz.; Solution of Ammonia, 1 oz.: dissolve.

The resin does not separate on the addition of water.

Not Official.

POTASSIUM.

POTASSIUM.

K, eq. 39.

Potassium was discovered by Sir Humphrey Davy in 1807. It is a soft metal (sp. g. 0·865), cutting like wax, of a silver-white colour, but tarnishes the instant it is cut, and assumes a leaden colour. It has so great an affinity for Oxygen, that when thrown on water it combines with it, evolving heat enough to set the Hydrogen on fire, and a Solution of Potash is the result.

Potassium Salts are characterised by the violet colour imparted to a bunsen flame (red through blue glass); in aqueous solution by the formation of a crystalline Cream of Tartar on the addition of Tartaric

Acid, and Acetate of Sodium when the Potassium is combined with a mineral Acid; and by giving a yellow crystalline precipitate with Perchloride of Platinum.

Potassium Salts are far more poisonous than those of Sodium.

POTASSA CAUSTICA.

CAUSTIC POTASH.

Hydrate of Potassium, **KHO**, eq. 56.

In hard white pencils, very deliquescent, powerfully alkaline and corrosive.

Commercial Potash as a rule contains 1 or 2 p.c. of Chloride derived from the Carbonate used in its preparation. When required pure it is dissolved in Absolute Alcohol, and the solution evaporated.

Solubility.—2 in 1 of Water; 1 in 3½ of Rectified Spirit; 1 in 3 of Glycerine; 1 in 4 of Proof Spirit (if stronger than this the Alcohol separates.)

Tests.—Its aqueous solution acidified with Nitric Acid gives only scanty white precipitates with Nitrate of Silver and Chloride of Barium (traces only of Chlorides and Sulphates.) 56 grains dissolved in Water leave only a trace of sediment, and require for neutralization at least 900 grain-measures of the volumetric solution of Oxalic Acid.

(Austr. and Hung., Kalium Hydro-oxydatum; Belg., Potassa Caustica Fusa; Dan., Norw. and Swed., Hydras Kalicus; Fr., Potasse Caustique à la Chaux, also à l'Alcool; Ger. and Russ., Kali Causticum Fusum; Port., Hydrato de Potassa; Span., Hidrato Potasico, also Potassa Caustica por la Cal; Swiss, Kalium Hydricum; U.S., Potassa; not in Dutch.)

Medicinal Properties.—A powerful escharotic. Chiefly employed for making caustic issues. Has been much used for the destruction of tumours and the surface of malignant ulcers.

Preparation.

LIQUOR POTASSÆ. Solution of Potash.

Carbonate of Potassium, 16; Slaked Lime, washed, 12; Distilled Water, 160: dissolve the carbonate of potassium in the water, and having heated the solution to the boiling-point in a clean iron vessel, gradually mix with it the washed slaked lime, and continue the ebullition for ten minutes with constant stirring; allow the insoluble matter to subside, transfer the clear liquid to a stoppered bottle of green glass by means of a syphon, and add distilled water if necessary to make it correspond with the tests of sp. gr. and neutralizing power.

Note.—The washed Lime is obtained from about 13 of Slaked Lime washed with Distilled Water (to free from Chloride), until a little of the washings acidified with Nitric Acid gives no cloudiness with Nitrate of Silver.

It is more readily prepared by dissolving 2 ozs. of solid Caustic Potash in 20 ozs. Distilled Water, and adjusting the solution to the proper sp. g.

It contains 5·84 per cent. (by weight) of Hydrate of Potassium.

1 fluid ounce contains 27 grains of Hydrate of Potassium, and has about the same saturating power as Liquor Sodæ.

Tests.—Sp. g. 1·058. 1 fluid ounce (462·9 grains by weight) requires for neutralization 482 grain-measures of the volumetric solution of

Oxalic Acid. It does not effervesce when added to an excess of diluted Hydrochloric Acid, and when mixed with an equal volume of Distilled Water, it does not give a precipitate with Solution of Lime or Oxalate of Ammonium — indicating absence of Carbonic Acid and Calcium. When it is treated with an excess of diluted Nitric Acid and evaporated to dryness, the residue forms, with water, a nearly clear solution, which is only slightly precipitated with Chloride of Barium (a trace of Sulphates), and Nitrate of Silver (a trace of Chlorides), and is rendered very slightly turbid by Ammonia (a trace of Alumina). When supersaturated with Hydrochloric Acid, it is unaffected by Sulphuretted Hydrogen (absence of Lead).

(U.S., sp. g. 1·036 (5 p.c.); Belg., Potassa Caustica Soluta, sp. g. 1·330—1·340; Dan., Solut. Hydrat. Kalici, sp. g. 1·194—1·198; Ger., Liquor Kali Caustici, sp. g. 1·142—1·146 (15 p.c.); Russ., Kali Causticum Solutum, sp. g. 1·330—1·334; Span., Solucion de Potassa Caustica, sp. g. 1·334; Swiss, Liquor Kali Hydrici, sp. g. 1·33; not in the others.)

Medicinal Properties.—Antacid, diuretic, and antilithic. As an antacid in dyspepsia. Useful in many skin diseases dependent upon a morbid condition of the stomach; given as an alterative in inflammation of the serous membrane attended with fibrinous depositions, as in pleuritis and pericarditis; also in periostitis; also in scrofula, syphilis, and chronic rheumatism. Externally as a wash in chronic skin diseases, as a stimulating lotion, and as an escharotic against the bite of rabid or venomous animals.

Dose.—15 to 60 minims three times a day in Beer, Milk, or Mistura Amygdalæ.

It acts powerfully on all organic matter, converting flannel into a kind of soft jelly after immersion for five or six hours.

Incompatibles.—Acids, Acidulous Salts, Metallic Salts, the preparations of Ammonium, Belladonna, Henbane, and Stramonium.

Antidotes.—Diluted Acetic Acid, Citric Acid, Lemon Juice, or any vegetable acids, fixed oils and demulcents.

Not Official.

BRANDISH'S ALKALINE SOLUTION.—American Pearl ashes, 6 lbs.; freshly prepared Quicklime, 2 lbs.; Wood ashes, 2 lbs.; Boiling Water, 6 gallons; or 6, 2, 2, and 60 parts: add first the Lime, then the Pearl ashes, and lastly the Wood ashes to the boiling water, stir well together, let it stand twenty-four hours, and decant the clear liquor.

Dose.—½ to 2 drms. in beer or milk. Given for scrofulous tumours.

POTASSA CUM CALCE (Vienna Paste).—Caustic Potash, 5 drms.; Slaked Lime, 6 drms.; Rectified Spirit, sufficient to make a mass. The paste is spread on the part to be cauterized, and is allowed to remain for ten or fifteen minutes, while the surrounding skin is protected by adhesive plaster.

It is also used in the treatment of lupus.

Potassa cum Calce in cylinders of three different sizes, consisting of two parts of Potassa and 1 of Lime, were introduced by Dr. Henry Bennet, and are a suitable form for the use of obstetricians.

U.S., Potassa and Lime, equal weights, rubbed together into a powder.

Russ. (Pasta Caustica) Potassa 3, Lime 1.

POTASSA SULPHURATA.

SULPHURATED POTASH.

Syn.—Hepar Sulphuris.

Solid greenish masses, liver-brown when recently broken, alkaline and acrid to the taste.

Solubility.—Soluble 1 in 2 of Water.

Tests.—About 50 per cent. of it should be soluble in Rectified Spirit. It forms with Water a yellow solution, which has the odour of Sulphuretted Hydrogen, and evolves it freely when excess of Hydrochloric Acid is dropped into it. The acid fluid when boiled and filtered is precipitated yellow by Perchloride of Platinum, and white by Chloride of Barium.

(In all the Pharmacopœias; U.S.; Austr., Ger., Russ. and Swiss, Kalium Sulfuratum; Austr., Hung. and Russ., have also Kalium Sulfuratum pro Balneo; Belg., Sulphuretum Potassii Officiale; Dan., Norw. and Swed., Hepar Sulphuris; Dutch, Trisulphuretum Kalicum; Fr., Sulfure de Potassium Solide; Port., Potassa Sulfurada; Span., Sulfuro (tri) Potasico.)

Medicinal Properties.—Irritant, narcotic, and antiseptic. A good remedy for scabies; used also for other chronic eruptions, especially psoriasis.

A hot bath of Sulphurated Potash relieves the itching of jaundice.—*L.* '85, ii. 1220.

Preparation.

UNGUENTUM POTASSÆ SULPHURATÆ.

Sulphurated Potash, 30 grs.; Hard Paraffin, ¼ oz.; Soft Paraffin, ¾ oz.: triturate the Sulphurated Potash in a glass or porcelain mortar and gradually add the melted mixture of the Paraffins, and rub together until the ointment is perfectly smooth and free from grittiness. =(1 in 15½).

Now made with the Paraffins in place of Lard.

Not Official.

BALNEUM SULPHURETUM—Sulphurated Potash, 4 oz.; Water, 30 galls.: dissolve.

Used as a solvent and stimulant in cases of psoriasis, &c.

This is not quite so agreeable as the Baréges waters, which may be made artificially as follows:—Sulphuret of Sodium, Carbonate of Sodium, and Chloride of Sodium, of each 20 grains to one gallon. But a much stronger solution is often used.

POTASSII ACETAS.

ACETATE OF POTASSIUM.

$KC_2H_3O_2$, eq. 98.

White, foliaceous, satiny masses, very deliquescent.

Solubility.—2 in 1 of Water; 1 in 1 of Proof Spirit; 1 in 2 of Rectified Spirit.

Tests.—Neutral to test-paper. Its aqueous solution is unaffected by Sulphide of Ammonium, gives a crystalline precipitate with Tartaric Acid, disengages Acetic Acid on the addition of Sulphuric Acid, and strikes a deep red colour with a diluted solution of Perchloride of Iron.

(In all the Pharmacopœias except Austr., which contains a *solution*, sp. g. 1·200; Ger., Hung. and Russ., have also a solution, sp. g. 1·176—1·180 (33 p.c.); Swed., has also Liquor, 1 in 20; Swiss, has also Liquor, sp. g. 1·16—1·17.)

Medicinal Properties.—Used as a diuretic in dropsy; and as an antilithic in gout. It allays sickness in pregnancy, and quiets irritation of the gastric and mucous membrane. It has been used with great success in acute rheumatism.

Best administered in simple solution, with a little Sugar if desired.

Dose.—10 to 20 grs. as a diuretic; 120 to 180 grs. as a laxative.

Not Official.

POTASSII BENZOAS.

A crystalline powder.

Solubility.—1 in 1½ of Water; 1 in 18 of Rectified Spirit.

Medicinal Properties.—Useful in cystitis with Lithic Acid diathesis.

Dose.—15 to 20 grs.

(Not in the Foreign Pharmacopœias.)

POTASSII BICARBONAS.

BICARBONATE OF POTASSIUM.

$KHCO_3$, eq. 100.

In colourless, right rhombic prisms, not deliquescent, of a saline, feebly alkaline taste.

Solubility.—1 in 3·2 of Water. Insoluble in Rectified Spirit.

Tests.—50 grains, exposed to a low red heat, leave 34½ grains of a white residue (Carbonate of Potassium), which requires for exact saturation 500 grain-measures of the volumetric solution of Oxalic Acid. It effervesces on the addition of diluted Hydrochloric Acid, forming a solution which gives a yellow precipitate with Perchloride of Platinum.

(Same as Belg., Fr. and U.S.; Dan., Norw. and Swed., Bicarbonas Kalicus; Ger., Russ. and Swiss, Kali Bicarbonicum; Port., Bicarbonato de Potassa; Span., Carbonato (bi) Potasico; not in Austr., Dutch, or Hung.)

Medicinal Properties.—Antacid, antilithic, and diuretic. A powerful alterative, from its rendering the blood and urine strongly alkaline. Used in dyspepsia as an antacid, and in urinary affections where there is a deposition of Uric Acid. Highly useful in acute rheumatism and in febrile conditions.

20 grains is prescribed in effervescence with 15 grs. of Citric Acid.
Closely resembles the Carbonate, but without its irritant qualities.
Administered in aërated water or plain bitter infusion.
Compressed discs of Bicarbonate of Potassium are convenient.

Does not excite the liver, unless it be given in large doses.—Dr Rutherford.

Dose.—10 to 20 grs. as an antacid or antilithic; 60 grs. as a diuretic. In acute rheumatism, 30 to 40 grs. every four hours, freely diluted.

Preparation.

LIQUOR POTASSÆ EFFERVESCENS. *Syn.* EFFERV. SOLUTION OF POTASH.

Bicarbonate of Potassium, 30 grs.; Water, 20 oz.: dissolve, and filter the solution, then force into it as much pure washed Carbonic Acid gas (obtained by the action of Sulphuric Acid on Chalk) as can be introduced with a pressure of about four atmospheres; bottle it, and secure the corks with wires.

Dose.—5 to 10 oz.

POTASSII BICHROMAS.

BICHROMATE OF POTASSIUM.

K_2CrO_4, CrO_3, eq. 295.

Used to produce Chromic Acid and Valerianate of Sodium.

Solubility.—1 in 10 of Water; 5 in 6 of boiling Water.

(Fr., Ger., Port., Russ., Span., Swiss and U.S.; not in the others.)

A powerful irritant poison. Rarely used in medicine, but extensively in the arts.

Antidotes.—Stomach pump or emetics, Carbonate of Magnesium or chalk, albuminous and demulcent drinks.

POTASSII BROMIDUM.

BROMIDE OF POTASSIUM.

KBr, eq. 119.

In colourless cubical crystals, odourless, of a pungent saline taste.

Solubility.—10 in 17 of Water; 1 in 1 of boiling Water; 1 in 95 of Rectified Spirit; 1 in 17 of boiling Rectified Spirit.

Tests.—10 grains require for complete decomposition not less than 838 nor more than 850 grain-measures of the volumetric solution of Nitrate of Silver. A solution of this salt, mixed with mucilage of Starch, and *a drop* of aqueous solution of Bromine or Chlorine, does not exhibit any blue colour—indicating absence of Iodide.

When its solution in water is mixed with a little Chlorine, Chloroform agitated with it, on falling to the bottom, exhibits a red colour.

(Austr., Ger., Hung., Russ., and Swiss, Kalium Bromatum; Belg., Bromuretum Potassii; Dan., Dutch, Norw., and Swed., Brometum Kalicum; Fr., Bromure de Potassium; Port., Brometo de Potassio; Span., Bromuro Potasico; U.S., Potassii Bromidum.)

Medicinal Properties.—Sedative and hypnotic. Very useful in epilepsy and in convulsions generally. Useful in headache and overworked brain. It exerts a sedative influence on the generative organs. Useful in some forms of mania and nymphomania. Relieves in some cases of whooping-cough and spasmodic asthma, both in children and adults. This salt, as well as the Bromide of Ammonium, is used to produce anæsthesia of the larynx.

Dose.—20 to 60 grains in the twenty-four hours.

Hydrate of Chloral 10 grs. combined with 10 grs. of Bromide of Potassium is given to induce sleep. They are also occasionally prescribed with Extract of Henbane and Extract of Indian Hemp.

Simple syrup covers the taste; Bromide of Sodium is, however, by far the more agreeable to the palate.

Incompatibles.—Acids, Acidulous Salts, Metallic Salts.

POTASSII CARBONAS.

CARBONATE OF POTASSIUM.

Syn. Subcarbonate of Potash, Salt of Tartar, Salt of Wormwood.

Carbonate of Potassium, K_2CO_3, eq. 138 (with about 16 per cent. of Water of Crystallization).

It generally contains 1 or 2 per cent. of Chloride.

A white crystalline powder, alkaline and caustic, very deliquescent.

Solubility.—4 in 3 of Water. Insoluble in Spirit.

Tests.—Loses about 16 per cent. of its weight when exposed to a red heat. When supersaturated with Nitric Acid and evaporated to dryness, the residue is almost entirely soluble in Water, only a little Silica remaining undissolved. This solution is precipitated only faintly by Chloride of Barium and Nitrate of Silver (traces of Sulphates and Chlorides). 83 grains require for neutralization at least 980 grain-measures of the volumetric solution of Oxalic Acid.

(In all the Pharmacopœias. Austr., Ger., Hung., Russ., and Swiss, Kalium Carbonicum; Belg., Carbonas Potassæ; Dan., Dutch, Norw., and Swed., Carbonas Kalicus; Fr., Carbonate de Potasse Pur; Port., Carbonato de Potassa; Span., Carbonato Potasico; U.S., Potassii Carbonas.)

Medicinal Properties.—Antacid, antilithic, and diuretic. It is less corrosive than Caustic Potash. Like the bicarbonate, it is diuretic, but inferior to the other salts of Potassium—the nitrate, acetate, and bitartrate. As an antilithic it is preferable to the bicarbonate, and if the tendency to lithic acid formation be great, about 35 grains, in divided doses, may be given daily. Sometimes a solution is used as an antilithic injection.

Dose.—10 to 30 grs.

Contained in Decoctum Aloes Compositum, Enema Aloes, Liquor Arsenicalis, Mistura Ferri Composita, and Unguentum Potassii Iodidi.

POTASSII CHLORAS.

CHLORATE OF POTASSIUM.

$KClO_3$, eq. 122·5.

In colourless, inodorous, rhomboidal, crystalline plates, with a cool saline taste. (This Salt ought not to have an odour of Chlorine.)

Solubility.—1 in 16 of cold Water; 1 in 2 of boiling Water; 1 in 1700 of Rectified Spirit; 1 in 152 of Proof Spirit.

Tests.—Its solution is not affected by Nitrate of Silver or Oxalate of Ammonium—absence of Chlorides and Calcium. By heat it fuses and gives off an abundance of oxygen gas. Explodes when rubbed in a mortar with Sulphur or a Sulphide.

(Austr., Ger., Hung., Russ, and Swiss, Kalium Chloricum; Belg., Chloras Potassæ; Dan., Dutch, Norw., and Swed., Chloras Kalicus; Fr., Chlorate de Potasse; Port., Chlorato de Potassa; Span., Chlorato Potasico; U.S.)

Medicinal Properties.—Stimulant and diuretic; it is eliminated unchanged in the urine. A strong solution, 1 or 2 in 40 of water, is the best **wash** for the mouth when the gums are spongy and irritable; it relieves the tenderness and induces a firmness of the gums; it is also an excellent **gargle** in diphtheria. A solution of ½ drm. in 4 oz. water, as an **injection** into the bladder daily, for vesical catarrh. The powder is applied to aphthæ in the mouth.

Dose.—10 to 20 grs. in water three or four times daily.

7 drms. taken by mistake caused death.—*L.* '79, i. 206.

Incompatibles.—Charcoal, Sulphur, Iodide of Iron. Mineral acids cause the evolution of Chlorine.

Preparation.

TROCHISCI POTASSII CHLORATIS.

Made with Chlorate of Potassium, Sugar, and Gum Acacia.

Each lozenge contains 5 grs. of Chlorate of Potassium.

Dose.—1 to 6 lozenges.

Lozenges are also made with fruit paste.

(Belg. (Tabellæ), 1½ grs.; Dutch, 1½ grs.; Fr. (Tablettes), 1½ grs.; Port.

(Pastilhas), 1⅓ grs.; Span. (Tabletas, 1⅓) grs.; Swiss (Pastilli), 1⅓ grs.; U.S., 5 grs. in each lozenge.)

Not Official.

GARGARISMA POTASSII CHLORATIS.—Chlorate of Potassium, 1 drm.; Glycerine, ½ oz.; water to 6 oz.

POTASSII CITRAS.

CITRATE OF POTASSIUM.

$K_3C_6H_5O_7$, eq. 306.

A white powder, of saline, feebly acid taste, and deliquescent.

Solubility.—10 in 6 of Water, 1 in 2 of Glycerine, 1 in 9 of Proof Spirit, but if more is dissolved the Spirit separates from the Water.

Tests.—Its dilute solution mixed with solution of Chloride of Calcium remains nearly clear till it is boiled, when a white precipitate separates, readily and almost entirely soluble in Acetic Acid. 102 grains, heated to redness till gases cease to be evolved, leaves an alkaline residue (Carbonate), which requires for exact neutralization 1000 grain-measures of the volumetric solution of Oxalic Acid.

The Chloride of Calcium test as given in the B.P. is greatly influenced by the conditions under which it is performed. If the Citrate solution is very dilute no precipitate will be obtained, even on boiling. If moderately dilute the precipitate is completely, but with some difficulty, soluble in Acetic Acid. Strong Citrate solutions with a small proportion of Chloride of Calcium do not precipitate at all, and with an excess of reagent give a precipitate on boiling which does not redissolve in Acetic Acid.

(Port. and U.S.; not in the others.)

Various solutions of Citrate of Potash occur as follows: Belg., Hung., and Russ., Potio Riverii; Dan., Julapium Salinum; Fr., Potion Gazeuse; Norw. and Swed., Liquor Citratis Kalici; Port., Soluto de Citrato de Potassa; U.S., Liquor Potassæ Citratis.

Medicinal Properties.—It is a valuable saline febrifuge, increasing the secretion of the kidneys, and is thus eliminated in the urine, rendering it neutral or alkaline. Useful in gout and rheumatism. Given as a drink in scurvy.

Dose.—20 to 60 grs. in water.

POTASSII CYANIDUM.

CYANIDE OF POTASSIUM.

KCN, eq. 65.

May be obtained by heating Ferrocyanide of Potassium at a red heat until gas ceases to be evolved, allowing the sediment to subside in the still molten mass, and pouring off the clear fluid. It may be purified if necessary by solution in and crystallization from spirit. White opaque deliquescent crystalline masses.

Solubility.—1 in 2¼ of water; almost entirely 1 in 100 of Rectified Spirit.

Tests.—Its aqueous solution has an alkaline reaction, it gives no precipitate with Ferrocyanide of Potassium (absence of Iron). The alcoholic solution gives no precipitate with Chloride of Barium (absence of Sulphate). 10 grains dissolved in 1 oz. of Distilled

Water requires about 730 grain-measures of the volumetric solution of Nitrate of Silver to be added before a permanent precipitate begins to form.

This test corresponds to 95 per cent. of real Cyanide of Potassium, but ordinary commercial Cyanide only contains about 40 per cent.

(Belg., Fr., Port., Span., Swiss, and U.S.; not in the others.)

Used in the purification of Bismuth, and occasionally employed to produce Hydrocyanic Acid.

Dissolve 20 grains of the Cyanide in 6 drachms of Distilled Water. Dissolve 50 grains Crystallized Tartaric Acid in 3 drachms of Rectified Spirit: mix the solutions. Bitartrate of Potassium is precipitated, and the solution contains 1 grain of Hydrocyanic Acid in every fluid drachm.

It is useful to remove the black stains on the skin caused by Nitrate of Silver.

Entomologists use it with gypsum to make poison bottles for killing insects without injuring the plumage or delicate structure; for this purpose 1 of the Cyanide, 2 of Plaster of Paris, and 1½ of Water, stirred together and poured whilst liquid into a wide-mouthed bottle, forms a hard floor, which is constantly giving off vapour.

POTASSII FERROCYANIDUM.

FERROCYANIDE OF POTASSIUM.

Syn. Yellow Prussiate of Potash.

$K_4FeC_6N_6, 3H_2O$, eq. 422.

A salt obtained by fusing animal substances, such as cuttings of horns, hoofs, and skins, with Carbonate of Potassium and Iron, in an iron pot, lixiviating the crude product with Water, and purifying the salt by crystallization.

Large yellow crystals.

Solubility.—1 in 4 of water; insoluble in Rectified Spirit.

Tests.—Its aqueous solution precipitates deep blue with Persulphate of Iron, chocolate-coloured with Sulphate of Copper and white with Acetate of Lead.

(Belg., Fr., Port., Span., Russ., and U.S.; not in the others

Medicinal Properties.—Useful in nervous and atonic dyspepsia, sick headache, irregular bowels, and want of muscular tone.

Dose.—2 grains three times a day.

Used in the preparation of diluted Hydrocyanic Acid and Cyanide of Potassium.

POTASSII IODIDUM.

IODIDE OF POTASSIUM.

KI, eq. 166.

In colourless, generally opaque, cubical crystals.

Solubility.—4 in 3 of Water; 1 in 10 of Rectified Spirit; 1 in 3 of Glycerine.

Tests.—The addition of Tartaric Acid and Mucilage of Starch to its watery solution does not develop a blue colour—absence of Iodate. Solution of Nitrate of Silver added in excess forms a yellow-white precipitate (Iodide of Silver), which, when agitated with Ammonia, yields by subsidence a clear liquid, in which excess of Nitric Acid causes very little turbidity—absence of Chlorine. Its aqueous solution is only faintly precipitated by the addition of saccharated Solution of Lime—only a trace of Carbonates. 10 grains requires for complete precipitation about 602 grain-measures of the volumetric solution of Nitrate of Silver.

(Austr., Ger., Hung., Russ., and Swiss, Kalium Iodatum; Belg., Ioduretum Potassii; Dan., Dutch, Norw., and Swed., Iodetum Kalicum; Fr. Iodure de Potassium; Port., Iodeto de Potassio; Span., Ioduro Potasico; U.S.)

Medicinal Properties.—It is useful in cases where Iodine is indicated, and being less irritating is much preferred for internal administration. Especially useful in secondary and tertiary syphilis. It reduces chronic inflammation and swellings and is useful in bronchocele. May be given with Quinine dissolved by Sulphuric or Phosphoric Acid, but not with Nitro-hydrochloric Acid; the eliminated Chlorine decomposes it, and makes an unsightly mixture. For secondary symptoms 60 grains in solution may be given in the twenty-four hours. Combined with Nux Vomica the system bears it better. It is useful in the elimination of Lead from the system in cases of Lead poisoning.

Has no notable effect on biliary secretion.—Dr. Rutherford.

Dose.—2 to 10 grs., increasing the dose. 20 grs. are given three times a day.

It is sometimes prescribed with Tincture of Bark, an ounce of which dissolves 30 grains; also with Fowler's Solution to prevent the rash sometimes produced.

It is better borne when given with Acetate of Potash, or when administered alternately with Iodide of Iron.—*L.* '88, i. 1019.

Incompatibles.—Sweet Spirit of Nitre, Subnitrate of Bismuth, Decoction of Liquorice, any vegetable preparation containing Starch.

Contained in Linimentum Iodi, Liquor Iodi, Tinctura Iodi, Unguentum Iodi.

Preparations.

LINIMENTUM POTASSII IODIDI CUM SAPONE.

Curd Soap, cut small, 2: Iodide of Potassium, 1½; Glycerine, 1; Oil of Lemon, ⅛; Distilled Water, 10: reduce the Soap to fine shreds, and dissolve this in the Water and Glycerine in a porcelain dish over a water bath; then pour it into a mortar in which the Iodide of Potassium has been previously powdered. Mix briskly and continue the trituration until the mixture is cold: set aside for an hour, then rub well the Oil of Lemon into the cream-like product.

The advantages of this liniment are that it does not stain, nor does it irritate when rubbed on the skin; it is employed in enlargement of the joints, indurated glands, especially the cervical glands.

The additions to the Brit. Pharm. 1874 stated that this Liniment may with advantage (?) be made with curd soap.—It makes a much stiffer liniment, and looks very opaque; patients will hardly believe it is the same liniment (*see below*).

(Swiss, Opodeldoc Iodatum, Soap 40, Alcohol (90 p. c.) 430, Iodide of Potassium 30, Oil of Lemon 3: dissolve.)

UNGUENTUM POTASSII IODIDI.

Iodide of Potassium, 64 grs.; Carbonate of Potassium, 4 grs.; Distilled Water, 1 drm.; Benzoated Lard, 1 oz.: dissolve the Carbonate and the Iodide in the Water, and mix thoroughly with the Lard. =(1 in 8¾).

The Carbonate was introduced in order to prevent the ointment turning yellow. Now made with Benzoated Lard in the place of Lard.

(Dan., Dutch, Fr., Ger., Hung., Norw., Port., Russ., Swed., and Swiss, 1 in 10; Span., 1 in 9½; U.S. 1 in 8½ with Hyposulphite of Sodium.)

Not Official.

LINIMENTUM POTASSII IODIDI C. SAPONE, B.P. 1867. Hard Soap, cut small, $1\frac{1}{2}$; Iodide of Potassium, $1\frac{1}{2}$; Glycerine, 1; Oil of Lemon, $\frac{1}{8}$; Water, 10.

"Put the Glycerine, Iodide, and 3 oz. Water into a clean 20-oz. wide-mouthed bottle; then dissolve the soap (finely shaved) in the 7 oz. of Water in a jar by the heat of a water bath; strain the solution whilst hot through muslin into the bottle containing the Iodide, etc.; allow to stand for two or three minutes, until the bottom of the soap solution is a little opaque, then mix by agitation; lastly add the Ess. Limonis, shaking briskly, and, after agitating at intervals for two hours or more, a liniment in the form of a soft white jelly will result, and remain so; if it should not, a small addition of water will generally perfect it."

We have given this formula, which is nearly the same as B. P. 1867, as it has been in use for nearly twenty years, and when made properly gives satisfaction. It forms a semi-opaque jelly.

POTASSII NITRAS.

NITRATE OF POTASSIUM.

Syn. Nitre, Saltpetre.

KNO_3, eq. 101.

Nitrate of Potassium of commerce, purified if necessary by crystallization from Solution in Distilled Water. In white opaque masses or fragments of striated, six-sided prisms, colourless, of a peculiar cool saline taste.

Solubility.—1 in 4 of cold water; $2\frac{1}{2}$ in 1 of boiling water; sparingly in Rectified Spirit.

Test.—Its solution is not affected by Chloride of Barium or Nitrate of Silver—indicating absence of Sulphates and Chlorides.

(In all the Pharmacopœias. Austr., Ger., Hung. and Swiss, Kalium Nitricum; Belg., Nitras Potassæ; Dan., Dutch, Norw. and Swed., Nitras Kalicus; Fr., Azotate de Potasse; Port., Azotato de Potassa; Span., Nitrato Potasico; Russ., Kali Nitricum depuratum; U.S., Potassii Nitras.)

Medicinal Properties.—Refrigerant, diuretic, and sedative. Useful as a gargle in inflammatory sore throat. It reduces the pulse, and is much used in acute inflammatory diseases. Nitrate of Potassium, 5 grs.; Bicarbonate of Potassium, 20 grs.; taken, during effervescence, with Citric Acid, 15 grs., in a small tumbler of cold water, is a pleasant cooling draught, and very effectual in lessening febrile excitement.

Dose.—5 to 20 grs. as a refrigerant and diuretic; 20 to 30 grs. as a vascular sedative in aneurism.

Not Official.

CHARTA NITRATA (Belg., Fr., Ger., Port., Russ., Swed., Swiss and U.S.).—Soak porous paper in a saturated solution of Nitre, dry it, roll it up, and burn in a candlestick. Used in asthma.

The paper is sometimes impregnated also with Compound Tincture of Benzoin, Spirit of Camphor, Oil of Cassia, Oil of Cinnamon, Oil of Santal, and Tincture of Sumbul.

CHARTA NITRATA ET CHLORATA.—Soak porous paper in a saturated solution of Nitrate of Potash and Chlorate of Potash, and dry.

For use in asthma.

POTASSII PERMANGANAS.

PERMANGANATE OF POTASSIUM.

$KMnO_4$, eq. 158.

In dark purple, slender, prismatic crystals, inodorous, with a taste, sweet and astringent, but disagreeably metallic.

Solubility.—1 in 18 of Water; 1 in 3 of boiling Water.

Tests.—Entirely soluble in cold Water, producing a rich purple colour. 5 grains dissolved in Water require, for complete decoloration, a solution of 44 grains of granulated Sulphate of Iron acidulated with 2 fluid drachms of diluted Sulphuric Acid.

(U.S.; Austr. and Russ., Kalium Hypermanganicum crystallisatum; Belg., Permanganas Potassæ; Dan., Norw. and Swed., Hypermanganas Kalicus; Dutch, Permanganas Kalicus; Fr., Permanganate de Potasse; Ger., Kalium Permanganicum: Hung. and Swiss, Kalium Hypermanganicum; Port., Permanganato de Potassa; Span., Permanganato Potasico.)

Medicinal Properties.—A powerful antiseptic. Useful in amenorrhœa, and in anæmia. Externally, as a caustic and deodorizer, to foul ulcers and cancers. Corrects offensive evacuations. Useful in ozæna; it corrected fœtid expectorations when carbolic acid failed.

Dose.—1 to 2 grs. three times daily in water, or in a pill with Kaolin Ointment.

Preparation.

LIQUOR POTASSII PERMANGANATIS.

Permanganate of Potassium, 88 grs.; Distilled Water, 20 oz.: dissolve. =(about 1 in 100).

Permanganate of Potassium increased from 80 to 88 grains.

If this needs filtration, Pyroxylin is best for the purpose.

(Half the strength of Condy's Fluid.)

Diluted with 40 to 80 parts water, it is useful as a **gargle** or as a cleansing **wash** for foul ulcers, &c.

B.P. Dose.—2 to 4 drms., but it is not given in solution on account of its disagreeable taste.

(Span. and Swiss (Solutio) 1 in 50; not in the other Pharmacopœias.)

Incompatibles.—Ought never to be put in corked bottles, as it soon becomes decomposed when in contact with any organic substance, animal or vegetable.

POTASSII SULPHAS.

SULPHATE OF POTASSIUM.

K_2SO_4, eq. 174.

In colourless, hard, six-sided prisms, terminated by six-sided pyramids.

Solubility.—1 in 10 of cold Water, 1 in 4 of boiling Water. Insoluble in Rectified Spirit.

Test.—Its solution is neutral to test-paper, and is not affected by Oxalate of Ammonium—indicating absence of Calcium.

(U.S.; Belg., Sulphas Potassæ; Dan., Dutch, Norw. and Swed., Sulphas Kalicus; Fr., Sulfate de Potasse; Ger., Hung., Russ. and Swiss, Kalium Sulfuricum; Port., Sulfato de Potassa, Span., Sulfato Potasico.)

Medicinal Properties.—Mildly cathartic, usually operating without irritation. Generally given in combination with Rhubarb. A useful purgative in jaundice and dyspeptic affections.

Is an hepatic and intestinal stimulant of considerable power. Its action on the liver is, however, uncertain, probably owing to its sparing solubility.—Dr. Rutherford.

Dose.—10 to 20 grs. as an alterative; 60 grs. as a purgative.

Contained in Pilula Colocynthidis Composita and Pulvis Ipecacuanhæ Compositus.

Sulphate of Potassium was long known as Sal Polychrestum, and the Bisulphate (the residue from making Nitric Acid) is called Sal Enixum.

Not Official.

POTASSII SULPHIS.—A Salt obtained by saturating a solution of Carbonate of Potassium with Sulphurous Acid Gas, and crystallizing it. Solubility, 1 in 3 of water. Dose, 10 grs. for Sarcinæ Ventriculi.

POTASSII TARTRAS.

TARTRATE OF POTASSIUM.

Syn. SOLUBLE TARTAR.

$K_2C_4H_4O_6$, H_2O, eq. 244.

In small, colourless, four or six-sided prisms.

Solubility.—10 in 6 of Water. Insoluble in Rectified Spirit.

Tests.—Entirely dissolved by its own weight of Water. 122 grains, heated to redness till gases cease to be evolved, leaves an alkaline residue (Carbonate), which requires for exact neutralization 990 grain-measures of the volumetric Solution of Oxalic Acid.

(U.S.; Belg., Tartras Potassæ; Dan., Norw. and Swed., Tartras Kalicus Fr., Tartrate de Potasse Neutre; Ger., Hung. and Swiss, Kalium Tartaricum; Port., Tartarato de Potassa; Russ., Kali Tartaricum; Span., Tartarato Potasico.)

Medicinal Properties.—A mild, cooling purgative, operating, like most of the neutral salts, without much pain, and producing watery stools. In smaller doses, diuretic and alterative.

Dose.—As a diuretic and alterative, 20 to 60 grs.; as a purgative, 120 to 200 grs.

POTASSII TARTRAS ACIDA.

ACID TARTRATE OF POTASSIUM.

Syn. POTASSÆ BITARTRAS; CREAM OF TARTAR.

$KHC_4H_4O_6$, eq. 188.

An acid salt obtained from the crude Tartar which is deposited during the fermentation of grape juice and from the lees of wine.

A fine gritty white powder, or fragments of cakes crystallized on one surface, of a pleasant acid taste.

Solubility.—1 in 200 of cold Water, 1 in 16 of boiling Water. Insoluble in Rectified Spirit.

Tests.—204 grains, heated to redness till gases cease to be evolved, leave an alkaline residue (Carbonate), which requires for exact neutralization at least 1000 grain-measures of the volumetric solution of Oxalic Acid. When incinerated it leaves a black residue, which, when dissolved in diluted Hydrochloric Acid and filtered and then neutralized by Ammonia, is usually rendered somewhat turbid by Oxalic Acid.

Tartrate of Calcium is a general impurity, 2 or 3 per cent. being found even in good samples, and to this extent cannot be considered an adulteration.

Some time ago samples were rather frequently met with containing Sulphate of Barium.—*P.J.*, viii. 350, 467, 595.

(In all the Pharmacopœias. Austr. and Hung., Kalium hydro-tartaricum; Belg., Bitartras Potassæ depuratus; Dan., Norw. and Swed., Bitartras Kalicus; Dutch, Tartras Kalicus Acidus; Fr., Tartrate de Potasse Acide; Ger. and Swiss, Tartarus depuratus; Port., Bitartrato de Potassa; Russ., Kali Bitartaricium depuratum; Span., Cremor Tartaro; U.S., Potassii Bitartras.)

Medicinal Properties.—Cathartic, diuretic, and refrigerant. Much used in febrile and dropsical affections.

Dose.—As a refrigerant or diuretic, 20 to 60 grs.; as an aperient, 60 to 120 grs. as a hydragogue cathartic, ½ to 1 oz.

Contained in Confectio Sulphuris, and Pulvis Jalapæ Compositus.

Not Official.

TARTARUS BORAXATUS. TARTRATE BORICO-POTASSIQUE. SOLUBLE CREAM OF TARTAR.

Belg. and Fr., Bitartrate of Potassium 4, Boric Acid 1, Water 10.
Dan., Bitartrate of Potassium 2, Borax 1, Water 8.
Dutch, Bitartrate of Potassium 5, Borax 2, Water 15.
Ger., Bitartrate of Potassium 5, Borax 2, Water 20.
Norw., Swed. and Swiss, Bitartrate of Potassium 2, Borax 1, Water 10.
Port., with Boric Acid and Bitartrate of Potassium, but no quantities given.
Russ., Bitartrate of Potassium 5, Borax 2, Water 16.
Span., Bitartrate of Potassium 4, Boric Acid 1, Water 24.

Soluble Cream of Tartar is a white amorphous powder soluble in equal parts of water.

Medicinal Properties.—Same as Cream of Tartar.

It has been recommended as a pill excipient.

PRUNUM.

PRUNE.

The dried drupe of the plum, *Prunus domestica.*

Imported from the South of France.

(Belg., Pulpa Prunorum; Fr., Prunier Commun; Port., Ameixas Passadas; Span., Ciruelo; U.S.; not in the others.)

Medicinal Properties.—Nutritious and refrigerant. Rarely prescribed, though often used in domestic medicine as a laxative.

Contained in Confectio Sennæ.

Not Official.

PRUNI VIRGINIANÆ CORTEX.

WILD CHERRY BARK.

The bark of *Prunus serotina*, collected in autumn.

In addition to Astringent Tannins, this bark contains Amygdaline and Emulsin, which on treatment with water develop Hydrocyanic Acid (in a similar manner to Aqua Lauro-cerasi), to which the sedative effect of its preparations are probably due.

(U.S.; not in the others.)

Preparations.

SYRUPUS PRUNI VIRGINIANÆ.—Bark, 5; Cold Water, 16: infuse 4 hours, then percolate to make 16; add Sugar, 28, and shake till dissolved.

Tonic and calming, highly useful in debility of stomach with local irritation.

Extremely useful given in full doses for spasmodic cough with irritable throat. It is also useful as a vehicle for nauseous medicines.

Dose.—2 to 4 drms.

SYRUPUS PRUNI VIRGINIANÆ (*B.P.C.*).—Wild Cherry Bark, in No. 20 powder, 3 oz.; moisten with Distilled Water and macerate for 24 hours, then pack in a percolator and pour on Distilled Water till 9 ozs. of percolate are obtained; in this dissolve 15 oz. Sugar without heat, add 1¼ oz. Glycerine, strain and make to 20 ozs.

Dose.—½ to 2 drms.

(U.S., Wild Cherry 12, Sugar 60, Glycerine 5, Water to make 100.)

TINCTURA PRUNI VIRGINIANÆ (*B.P.C.*).—Wild Cherry Bark, 4 ozs.; Distilled Water, 7½ ozs.; macerate for 24 hours in a closed vessel and add Rectified Spirit 12½ ozs.: macerate for seven days, then press, filter, and add Proof Spirit to make 20 ozs.

Dose.—20 to 60 minims.

PTEROCARPI LIGNUM.

RED SANDAL-WOOD.

Syn.—Red Sanders-Wood.

The sliced or rasped heart-wood of *Pterocarpus santalinus*.

From Madras and Ceylon.

Used solely as a colouring agent.

(Austr., Belg., Dan. and Swed., Lignum Santali Rubrum; Dutch, Lignum Santalinum; Fr., Santal Rouge; Port., Sandalo Rubro; Span., Sandalo Rojo; Swiss, Lignum Sandali; U.S., Santalum Rubrum; not in Ger., Hung., Norw. or Russ.)

Contained in Tinctura Lavandulæ Comp.

Not Official.

PULSATILLA.

The herb of *Anemone Pulsatilla* and *Anemone pratensis* collected soon after flowering. It should be carefully preserved and not kept longer than one year.

(Fr., Span. and U.S.; not in the others).

Preparation.

TINCTURA PULSATILLÆ.—Carefully dried Herb, 1; Proof Spirit to percolate 10.

Medicinal Properties.—Has been recommended in orchitis and epididymitis, but in experiments at the Lock Hospital it was found to be valueless.—*L.* '89, ii. 216.

Dose.—5 to 30 minims.

PULVERES.

POWDERS.

The following Powders are contained in the British Pharmacopœia, the formulas of which will be found under the names of the substances from which they are prepared:—

	Proportions of active ingredients in the whole.
PULVIS AMYGDALÆ COMPOSITUS	8 in 13.
PULVIS ANTIMONIALIS	Oxide 1 in 3.
PULVIS CATECHU COMPOSITUS	1 in 2½.
PULVIS CINNAMOMI COMPOSITUS	1 in 3.
PULVIS CRETÆ AROMATICUS	about 1 in 4.
PULVIS CRETÆ AROMATICUS CUM OPIO	Opium 1 in 40.
PULVIS ELATERINI COMPOSITUS	1 in 40.
PULVIS GLYCYRRHIZÆ COMPOSITUS	Senna 1 in 6.
PULVIS IPECACUANHÆ COMPOSITUS	Opium 1 in 10.
PULVIS JALAPÆ COMPOSITUS	1 in 3.

	Proportions of active ingredients in the whole.
PULVIS KINO COMPOSITUS	Opium 1 in 20.
PULVIS OPII COMPOSITUS	Opium 1 in 10.
PULVIS RHEI COMPOSITUS	1 in $4\frac{1}{2}$.
PULVIS SCAMMONII COMPOSITUS	1 in 2.
PULVIS TRAGACANTHÆ COMPOSITUS	1 in 6.

PYRETHRI RADIX.

PELLITORY ROOT.

The dried root of *Anacyclus Pyrethrum.*

Collected chiefly in Algeria.

(Austr., Belg., Fr. (Pyrethre Officinal), Port., Pyrethro; Span., Pelitre; Swiss; U.S., same as Brit.; Dan., Russ. and Swed., use the root of *Anacyclus officinarum*; not in the others.)

Medicinal Properties.—It is powerfully stimulant to the salivary glands, causing a copious flow of saliva, and, on that account, has been used in cases of paralysis of the tongue.

Preparation.

TINCTURA PYRETHRI.

Pellitory Root, in No. 40 Powder, 4; Rectified Spirit, 20: macerate for forty-eight hours with fifteen of the spirit, agitating occasionally, then pack in a percolator, let it drain, and pour on the remaining spirit; when it ceases to drop, press, filter, and make up with Rectified Spirit to 20. =(1 in 5).

Used on cotton wool for relieving toothache, or when diluted as a mouth-wash.

(Belg., Dan., Fr., Russ. and Span., 1 and 5; U.S., 1 in 5; by weight; not in the others.)

Not Official.

TROCHISCI PYRETHRI (*T.H.*)—Contain one grain in each.

Not Official.

PYRETHRI FLORES.

Syn. Insect Powder.

The powder of the flower-heads, obtained in the Caucasus, from *Pryethrum roseum* and *P. carneum*, and in Dalmatia from *Pyrethrum cinerariæfolium.*

(Fr.; not in the other Pharmacopœias.)

Keeps away fleas; it also drives away ants if placed in their track.

Preparation.

TINCTURA PYRETHRI FLORUM.—The flower heads, in powder, 1; Proof Spirit to percolate 4.

Diluted 1 to 10 of Water forms a **lotion** to keep away insects.

Not Official.

PYRIDIN.

C_5H_5N, eq. 79.

A colourless, volatile, liquid alkaloid obtained from the products of the destructive distillation of bones.

It has a powerful and a peculiar odour. Its aqueous solution gives a strong alkaline reaction.

Sp. g. ·980. Boils about 116° C.

It is miscible with Water, Rectified Spirit, Ether, and the fixed Oils.

It yields a crystalline but deliquescent salt with Hydrochloric Acid.

Test.—Added to a solution of Sulphate of Copper, it gives a bluish-green precipitate, soluble in excess to a dark blue liquid, similar to that produced by Ammonia.

Medicinal Properties.—Useful in the treatment of Asthma; 4 or 5 grammes (62 to 77 grains) are allowed to evaporate from a flat dish in a small room, the patient being exposed to its vapour for 1½ hours three times a day.—*B.M.J.* '85, ii. 1074.

Is most beneficial in cardiac dyspnœa, emphysema and angina pectoris.—*L.* '88, i. 437; *L.* '88, ii. 438.

Not Official.

PYRODIN.

ACETYLPHENYLHYDRAZINE.

A white crystalline powder. Derived from coal tar.

Solubility.—1 in 50 of Water.

Medicinal Properties.—A powerful antipyretic, which must be given with caution, as toxic effects have been produced.—*L.* '88, ii. 1149, 1195: *B.M.J.* '88, ii. 1470.

Dose.—8 to 12 grains once in the 24 hours.

PYROXYLIN.

GUN COTTON.

Syn. Gossypium Fulminans. Lana Collodii. Colloxylinum.

Cotton Wool, 1; Sulphuric Acid, 5; Nitric Acid, 5: mix the Acids. immerse the Cotton, and stir with a glass rod for three minutes, or until it is thoroughly wetted; then remove it, and thoroughly wash out the acid, so that the washings cease to precipitate with Chloride of Barium. Drain on filtering-paper, and dry in a water bath.

Tests.—Readily soluble in a mixture of Ether and Rectified Spirit. Leaves no residue when exploded by heat.

Dan., Cotton 1, Crude Nitric Acid (sp. g. 1·382—1·390) 8, Crude Sulphuric Acid (sp. g. 1·833) 20.
Belg., Pyroxylum, and Swiss, Gossypium Fulminans; no formula given.
Dutch and Ger., Purified Cotton 55, Crude Nitric Acid (sp. g. 1·380) 400, Crude Sulphuric Acid (sp. g. 1·830) 1000.
Fr., Fulmicoton. Cotton Wool 11, Nitric Acid 100, Sulphuric Acid 200.
Norw., Cotton 1, Nitre 20, Crude Sulphuric Acid 30.
Port. (Algodao Polvora), and Span. (Pyroxilina), Cotton 1, Nitre 20, Pure Sulphuric Acid (sp. g. 1·84) 30.
Russ. and Swed., Cotton 1, Crude Nitric Acid (sp. g. 1·382—1·390) 9, Crude Sulphuric Acid (sp. g. 1·833) 18.
U.S., Pyroxylinum. Cotton 1, Nitric Acid 10, Sulphuric Acid 12.
All by weight. Not in Austr. or Hung.

Used in the preparation of Collodium, Collodium Flexile, Collodium Vesicans.

Not Official.

CELLOIDIN.—Sold in cakes. When dissolved in a mixture of Alcohol and Ether it is used for imbedding histological specimens previous to cutting sections.

PHOTOXYLIN.—A nitrated wood pulp prepared in St. Petersburg. When made into Collodion it is stated to give a tougher film than Pyroxylin on evaporation.—*L.* '87, i. 1253; *B.M.J.* '88, i. 555.

QUASSIÆ LIGNUM.

QUASSIA WOOD.

The wood of *Picræna excelsa,* in raspings, shavings, or chips. From Jamaica.

(U.S., same as Brit.; Austr., Belg., Dan., Norw., Russ., Span., Swed. and Swiss, use *Quassia amara;* Dutch, Fr., Ger. and Port., use both. Not in Hung.)

Medicinal Properties.—Possesses in a high degree the properties of the simple bitters, without astringency. Particularly adapted to dyspepsia and in the debility which succeeds acute disease, also as a tonic in intermittents.

A few chips of Quassia or a weak infusion used in the morning bath is a protection against the annoying insects found in our cornfields.—*L.* '84, ii. 306.

Preparations.

EXTRACTUM QUASSIÆ.

Quassia Wood, rasped, 1 lb.; Distilled Water, a sufficiency: macerate the Quassia in 8 oz. of water for twelve hours, pack in a percolator, add water till the Quassia is exhausted; evaporate the liquor, filter before it becomes too thick, again evaporate by a water bath to a proper consistence for forming pills.

48 oz. of wood yield 1 oz. of extract.

Dose.—3 to 5 grs.

(Fr. (Quassia Amara), Belg., Port. and Span., use cold Water; Austr., Dan., Dutch, Ger., Russ., and Swiss, use boiling Water; U.S., with cold Water and Glycerine, also fluid extract. Not in Hung., Norw. or Swed.)

INFUSUM QUASSIÆ.

Quassia Wood, in chips, 55 grs.; cold Distilled Water, 10 oz.: infuse half an hour, and strain. =(about 1 in 80).

Dose.—1 to 2 oz.

(Fr., 1 in 200 Quassia Amara; Span. (Tinct. Acuosa de Quassia Amarga) 1 in 100: not in the others.)

A good vehicle for iron preparations.

TINCTURA QUASSIÆ.

Quassia Wood, in chips, $\frac{3}{4}$; Proof Spirit, 20: digest seven days, agitating occasionally, filter, and make up with Proof Spirit to 20. =(1 in 27).

Dose.—$\frac{1}{2}$ to 2 drms.

(Belg., Dan., Dutch and Fr., 1 and 5; U.S., 1 in 10; all by weight; not in the others.)

Not Official.

QUEBRACHO.

The bark of *Aspidosperma Quebracho*, obtained from Chili (*Quebracho blanco.*)

(Austr.; not in the other Pharmacopœias.)

Medicinal Properties.—It is said to possess tonic, febrifuge, and anti-asthmatic properties.

The following alkaloids and salts can be obtained:—Aspidospermin Cryst. and Sulphate (Fraude); Aspidosamin and Hydrochlorate (Hesse); Quebrachin Cryst. and Hydrochlorate (Hesse), Dose, $\frac{3}{4}$ to $1\frac{1}{2}$ grains; Quebrachamin and Sulphate (Hesse); Hypoquebrachin and Hydrochlorate (Hesse).

Of the alkaloids Quebrachine is more active and more poisonous than Aspidospermine: it has greater antithermic properties.—*L.* '86, i. 804.

QUERCUS CORTEX.

OAK BARK.

The dried bark of the small branches and young stems of *Quercus robur*, collected in spring from trees growing in Britain.

(In all the Pharmacopœias except Dutch; Fr., Chêne; Port., Corvalho; Span., Encina; U.S., Quercus alba.)

Medicinal Properties.—A valuable astringent, whether administered internally or applied externally. May be used either generally or topically, in all cases requiring astringents, such as tenderness of the gums; in leucorrhœa, prolapsus, &c.

Dose.—Of the powder, 30 to 120 grs.

Preparation.

DECOCTUM QUERCUS.

Oak Bark, bruised, $1\frac{1}{4}$; Distilled Water, 20: boil ten minutes in a covered vessel, and strain; wash the marc with water to make 20.

=(1 in 16).

Dose.—1 to 2 oz. two or three times daily.

(Russ., Dec. Quercus Aluminatum, 1 in 15; not in the other Pharmacopœias.)

Incompatibles.—Mineral Acids, Alkalies, Metallic Salts, Gelatine, Alkaloids.

Not Official.

QUILLAIA.

Syn. Panama Wood. Soap Bark.

The inner bark of the tree, *Quillaia saponaria*; it imparts a soapy character to cold water when macerated in it, and has been much used to diffuse oily liquids, and as a wash for cleansing the hair.

More recently it has been found to possess properties allied to Senega, but it contains the two glucosides "Quillaic Acid" and "Sapotoxin" in much greater quantity than they exist in Senega.

(Fr., Bois de Panama; U.S., Quillaia; not in the others.)

Medicinal Properties.—Has been strongly recommended as an expectorant, but it is contra-indicated in ulcerations of the throat and alimentary canal, since it is too powerful an irritant.—*Pr.* xxxvi. 29.

Preparation.

TINCTURA QUILLAIÆ.—Bark, 1; Proof Spirit, to percolate, 5.

(Fr. (Teinture de Panama), 1 in 5 (Alcohol 80 p. c.); B.P.C., 1 in 10 (Rectified Spirit).)

QUININÆ HYDROCHLORAS.

HYDROCHLORATE OF QUININE.

$C_{20}H_{24}N_2O_2HCl, 2H_2O$, eq. 396·5.

Obtained from the same sources and by the same process as Sulphate of Quinine, the separated alkaloid being neutralized by Hydrochloric Acid.

Solubility.—1 in 24 of Water; 1 in 1 of boiling Water; 1 in 1 of Rectified Spirit; 1 in 1 of Proof Spirit; very soluble in Chloroform.

Tests.—Its solution gives with Nitrate of Silver a white precipitate insoluble in Nitric Acid; with Chloride of Barium it gives only a faint turbidity—trace of Sulphate. It may be converted into Sulphate of Quinine by dissolving it together with an equal weight of Sulphate of Sodium in ten times its weight of hot Distilled Water, and setting the mixture aside at 60° F. (15·5° C.) for half an hour. Such Sulphate should respond to the tests mentioned under Quininæ Sulphas.

(Austr., Ger., Hung., and Swiss, Chininum Hydrochloricum; Dan., Norw., and Swed., Chloretum Chinicum; Dutch, Hydrochloras Chinini; Fr., Chlorohydrato do Quinine Basiquo; Port., Chlorhydrato do Quinina; Span., Cloruro Quinico; Russ. Chininum Hydrochloratum; U.S.; not in Belg.)

Medicinal Properties.—Same as Sulphate of Quinine. This salt is very much more soluble than the Sulphate.

Dose.—1 to 10 grs.

Preparation.

TINCTURA QUININÆ.

Hydrochlorate of Quinine, 480 grs.; Tincture of Orange Peel, 60 oz.: dissolve with a gentle heat, digest for three days with occasional agitation, and filter. =(1 grain in 60 minims).

It is now made with Hydrochlorate of Quinine in place of Sulphate. Complete solution is effected at the ordinary temperature, heat is consequently unnecessary.

Dose.—1 to 1½ drms.

QUININÆ SULPHAS.

SULPHATE OF QUININE.

$((C_{20}H_{24}N_2O_2)_2H_2SO_4)_2 15H_2O$, eq. 1762.

The sulphate of an alkaloid prepared from the powder of various kinds of Cinchona and Remijia Bark by extraction with Spirit after the addition of Lime, or by the action of alkali on an acidulated aqueous infusion, with subsequent neutralization of the alkaloid by Sulphuric Acid, and purification of the resulting salt.

(Quinine was discovered by Pelletier and Caventou in 1820.)

Solubility.—About 1 in 600 of Water; 1 in 25 of boiling Water; 1 in 65 of Rectified Spirit; 1 in 40 of Glycerine.

60 grs. require 60 minims of diluted Sulphuric Acid or 100 minims of diluted Phosphoric Acid for solution in 2 oz. of distilled water.

66 grs. require 60 minims of diluted Nitric Acid for solution in 2 oz. of water.

25 grs. of Sulphate of Quinine should lose 3·8 grs. of water by drying at 212° F.

Tests.—Dissolved in pure Sulphuric Acid, has a feeble yellowish tint, and undergoes no further change of colour when gently warmed. Its solutions give with Chloride of Barium a white precipitate insoluble in Nitric Acid, or when treated first with Solution of Chlorine and afterwards with Ammonia they become of an emerald-green colour, and Solution of Ammonia gives with them a white precipitate of Quinine soluble in Ether and in excess of the Solution of Ammonia. Ignited with free access of air, it burns without leaving any residue.

In all the commercial samples we have had occasion to examine the Ammonia precipitate did *not* completely dissolve in excess of the reagent. This is also noticed in testing other Salts of Quinine.

Test for Cinchonidine and Cinchonine.—Heat 100 grs. of the Sulphate of Quinine in 5 or 6 oz. of boiling Water, with 3 or 4 drops of diluted Sulphuric Acid. Set the solution aside until cold. Separate, by filtration, the purified Sulphate of Quinine, which has crystallized out. To the filtrate, which should nearly fill a bottle or flask, add Ether, shaking occasionally, until a distinct layer of Ether remains undissolved. Add Ammonia in very slight excess, and shake thoroughly, so that the Quinine at first precipitated shall be redissolved. Set aside for some hours or during a night. Remove the supernatant clear ethereal fluid, which should occupy the neck of the vessel, by a pipette. Wash the residual aqueous fluid and any separated crystals of alkaloid with a very little more Ether, once or twice. Collect the separated alkaloid on a tared filter, wash it with a little Ether, dry at 212° F. (100° C.), and weigh. Four parts of such alkaloid correspond to five parts of crystallized Sulphate of Cinchonidine or of Sulphate of Cinchonine.

Test for Quinidine.—Recrystallize 50 grains of the original Sulphate of Quinine as described in the previous paragraph. To the filtrate add Solution of Iodide of Potassium and a little Spirit of Wine to prevent the precipitation of amorphous Hydriodates. Collect any separated Hydriodate of Quinidine, wash with a little Water, dry, and weigh. The weight represents about an equal weight of crystallized Sulphate of Quinidine.

Test for Cupreine.—Shake the recrystallized Sulphate of Quinine, obtained in testing the original Sulphate of Quinine for Cinchonidine and Cinchonine, with 1 fl. oz. of Ether and ¼ oz. of Solution of Ammonia, and to this ethereal solution, separated, add the ethereal fluid and washings also obtained in testing the original sulphate for the two alkaloids just mentioned. Shake this ethereal liquor with a quarter of a fl. oz. of a 10 per cent. Solution of Caustic Soda, adding water if any solid matter separates. Remove the ethereal solution. Wash the aqueous solution with more Ether, and remove the ethereal washings. Add diluted Sulphuric Acid to the aqueous fluid heated to boiling, until the soda is exactly neutralized. When cold collect any Sulphate of Cupreine that has crystallized out on a tared filter; dry and weigh.

Sulphate of Quinine should not contain much more than 5 per cent. of sulphates of other Cinchona alkaloids.

(In all the Pharmacopœias; Austr., Ger., Hung., Russ., and Swiss, Chininum Sulfuricum; Belg., Sulphas Quininæ; Dan., Sulphas Chinicus; Dutch, Sulphas Chinini; Fr., Sulfate de Quinine Basique; Port., Sulfato de Quinina; Span., Sulfato Quinico; U.S. Quininæ Sulphas.)

Medicinal Properties.—In small doses it acts as a tonic. In large doses it is an antiperiodic in intermittent fevers, and an antipyretic in acute and in specific fevers; it relieves supra-orbital neuralgia.

Quinine as a parturient.—*B.M.J.* '85, i. 427, 1320.

Quinine in pneumonia.—*B.M.J.* '85, i. 1245.

Quinine in large doses or if taken frequently produces deafness.—*L.M.R.* '81, 177.

Dose.—1 to 5 grs. three times daily as a tonic, or in larger doses as an antiperiodic.

It is prescribed in solution and in pill.

It is made much more soluble in water by the addition of dilute Sulphuric Acid or dilute Hydrochloric Acid, 1 minim to each grain; it also dissolves readily in Tincture of Perchloride of Iron.

It is best made into pills with liquid Glucose.

For **hypodermic injection** see Not Official preparations, where the solubilities of the various salts are given. Of the neutral salts, the Lactate (1 in 4) is the most soluble; of the acid salts, the Hydrochlorate (1 in 1).

When a large dose (say 10 grains) is given, it is best suspended in water; the bitterness is not then so intense as when in solution.

In mixtures, Tincture of Orange and sometimes Spirit of Ether are added to prevent it causing headache.

Quinine is precipitated from aqueous solutions of its salts by alkalies. In the Ammoniated Tincture of Quinine the alkaloid is dissolved by the alcohol.

The Infusion of Roses of the Pharmacopœia is a favourite vehicle, but it is always turbid and unsightly: when Pure Quinine is dissolved in the Infusion of Roses with Nitric Acid (*vide* Rosa Gallica) it is bright and attractive in appearance. But if Sulphuric Acid, or even Sulphate of Quinine, is prescribed in this Infusion, it becomes at once turbid.

Incompatibles.—All Alkalies and their Carbonates: astringent infusions throw down a Tannate of Quinine, which Sulphuric Acid, instead of dissolving, helps in precipitating. Tinctures do not readily dissolve Sulphate of Quinine; it should be always prescribed in mixtures with a little Nitric Acid, or if preferred in drops, can be made as already directed with either of the Acids, as mentioned above.

Used in the preparation of Ferri et Quininæ Citras.

Preparations.

TINCTURA QUININÆ AMMONIATA.

Sulphate of Quinine, 160 grs.; Solution of Ammonia, 2½ ozs.; Proof Spirit, 17½ ozs.: dissolve the Quinine in the Spirit with a gentle heat, and add the Solution of Ammonia. =(1 gr. in 60 minims).

Heat is unnecessary as the Sulphate of Quinine is readily dissolved by the mixture of Spirit and Ammonia.

Dose.—½ to 2 drms. in a wineglass of water.

When mixed with water the Quinine is precipitated in a fine state of division, but the particles soon aggregate and adhere to the sides of the glass; therefore this preparation cannot be prescribed in mixtures.

(Not in the Foreign Pharmacopœias.)

VINUM QUININÆ.

Sulphate of Quinine, 20 grs.; Citric Acid, 30 grs.; Orange Wine, 20 oz.: dissolve first the Citric Acid and then the Sulphate of Quinine in the Wine; digest three days, and filter. =(1 gr. in 480 minims).

Dose.—½ to 1 oz.

(Not in the Foreign Pharmacopœias.)

Not Official.

QUININA.—This alkaloid is precipitated from solutions of its Salts as a Trihydrate, containing 14 p. c. of water. It is met with as a white, soft, granular powder, slightly damp from adherent moisture, easily soluble in Ether or dilute Hydrochloric Acid, and melting to a gummy-looking mass at about 140° F.

(Austr., Dutch, Fr., Hung., Port., Russ., Span., Swed., Swiss, and U.S.; not in the others.)

Solubility.—Very sparingly in Water; 1 in 1 of Rectified Spirit; 1 in 3 of Chloroform; 1 in 4 of Ether.

QUININÆ ARSENIAS.—The composition of this Salt being so variable, according to the method of preparation, the compound ($C_{20}H_{24}N_2O_2.AsH_3O_4H_2O$), containing 66 p. c. of Quinine and 29 p. c. of Arsenic Acid, has been recommended as the most stable and otherwise suitable.—*P.J.* xx. 162.

(Russ. and Swiss; not in the others.)

Dose.—One-tenth grain.

QUININÆ CARBOLAS.—The crystalline Salt contains 77 p. c. of Anhydrous Quinine. It has been found on the Continent (*Jobst.P.J.*, v. 986) that the preparation sold there under that name was a Sulpho-Carbolate, probably owing to the use of Quinine Sulphate in its manufacture. For extemporaneous preparations, the alkaloid should, of course, be always used, and the best proportions are:—Quinine, 4; Carbolic Acid, 1; melt and cool.

(Not in the Foreign Pharmacopœias.)

Dose.—2 grs. for Diarrhœa.

QUININÆ CITRAS.—Crystallises in delicate needles; sparingly soluble in water.

(Dutch, Port., Russ., and Swiss; not in the others.)

Solubility.—1 in 1600 of Water; not soluble in Lemon Juice; slightly in Chloroform.

QUININÆ HYDROBROMAS.—Colourless crystals, neutral or slightly alkaline, containing $3H_2O$.

(Dutch, Fr., Port., Span., and U.S.)

Solubility.—1 in 53 of Water.

QUININÆ HYDROBROMAS ACIDA.—Colourless crystals.

(Fr., Bromhydrate de Quinine Neutre; not in the others.)

Solubility.—1 in 6 of Water.

QUININÆ HYDROCHLORAS ACIDA.—An extremely soluble Salt, dissolving in its own weight of water.

QUININÆ HYDRIODAS.—The neutral Salt has about the same solubility in water as the Sulphate, and dissolves freely in Alcohol and Ether. The Acid (soluble) Salt crystallises with $5H_2O$ in large laminæ of a fine yellow colour, and soluble 1 in 20 of water.

QUININÆ HYPOPHOSPHIS.

(Not in the Foreign Pharmacopœias.)

Solubility.—1 in 66 of Water; 1 in 40 of Rectified Spirit.

QUININÆ LACTAS.—A white crystalline powder, soluble 1 in 6 of water.

A **solution**, 1 in 4, can be made by neutralising Quinine with Lactic Acid.

(Fr. and Swiss; not in the others.)

QUININÆ PHOSPHAS.—Light, white, silky needles, containing 7 to 8 per cent. of water.

(Not in the Foreign Pharmacopœias.)

Solubility.—1 in 420 of Water; 1 in 110 of Rectified Spirit.

QUININÆ SALICYLAS.—Slightly crystalline powder.

(Fr., Russ., and Span.; not in the others.)

Solubility.—1 in 630 of water; 1 in 24 Rectified Spirit; 1 in 25 of Chloroform.

QUININÆ SULPHAS ACIDA, *syn.* QUININÆ SULPHAS NEUTRALIS.—Masses of interlacing prisms, containing $15H_2O$, melting in their water of crystallisation at 212°.

(Austr., Belg., Fr., Ger., Hung., Swiss, and U.S.)

Solubility.—1 in 10 of Water; 1 in 45 of Rectified Spirit.

A solution of 1 or 2 grs. to the ounce of Distilled Water applied to the eyes and nostrils for Hay Fever.

QUININÆ TANNAS.—A yellowish-white amorphous body; sparingly soluble in water, very soluble in Alcohol.

(Austr., Belg., Dutch, Fr., Hung., Port., Russ., Span., and Swiss; formerly in Ger.; not in the others.)

Large doses recommended in whooping cough, $1\frac{1}{2}$ grains for each year of age.—*L.M.R.* '81, 177.

QUININÆ TARTRAS.

Solubility.—Very sparingly in Water (about 1 in 1000).

Sulphate of Quinine, 80 grs.; Tartaric Acid, 40 grs.; Distilled Water, to measure 4 drms., has been used in India for hypodermic injection.

QUININÆ VALERIANAS.—A white crystalline Salt, smelling strongly of Valerianic Acid.

(Belg., Fr., Port., Russ., Span., Swed., Swiss, and U.S.)

Made by decomposing Hydrochlorate of Quinine with Valerianate of Sodium.

Solubility.—1 in 120 of cold Water; 1 in 2 of Rectified Spirit; 1 in 14 of Ether.

Dose.—1 to 3 grs.

SYRUPUS QUININÆ DIKINATIS.—Introduced by Dr. Donovan of Dublin.

1 drm. contains 2 grs. of Dikinate of Quinine, which are equal to $3\frac{3}{4}$ oz. of Decoction of Bark, or 96 grs. of Powdered Bark.

Dose.—$\frac{1}{2}$ to 1 drm.

WARBURG'S TINCTURE FOR MALARIAL FEVER.—Dr. Carl Warburg's contains Quinine. The formula for this is given in the *M.T.* '75, ii. 540, with some interesting cases by Professor Maclean, C.B.

QUINETUM.—The mixed Alkaloids from the E. I. Red Bark. The Sulphate resembles Sulphate of Quinine, and is given in the same dose.

Solubility.—Sparingly in Water; 1 in 90 of Rectified Spirit.

QUINIDIÆ SULPHAS.—White silky crystals, containing $6H_2O$, equal to 12½ per cent. of water.

(Fr., Swiss, and U.S.; not in the others.)

Solubility.—1 in 300 of Water; 1 in 65 of Rectified Spirit.

QUINOIDIN, *Syn.* Chinoidin. — A mixture of alkaloids, mostly amorphous, obtained as a by-product in the manufacture of the crystallisable alkaloids from Cinchona. A brownish black mass with alkaline reaction. On ignition should not leave more than ·7 per cent. of ash.

(Dan., Ger., Norw., Russ., Swed., and U.S.; not in the others.)

RESINA.

RESIN.

Syn. Colophonium.

The residue left after the distillation of the Oil of Turpentine from the crude Oleo-resin (Turpentine) of various species of *Pinus*.

Yellow, translucent.

Solubility.—In almost all proportions of Rectified Spirit, Ether, and Oil of Turpentine, and in hot Olive Oil.

(In all the Pharmacopœias; U.S., Resina; Austr., Belg., Dutch, Ger., and Swiss, Colophonium; Dan., Norw., Russ., and Swed., Resina Colophonium; Fr., Colophone and Poix-resine; Hung., Colophonium Depuratum Flavum; Port., Pez Loaro and Colophonia; Span., Resina Comum de Pino and Colofonia.)

Medicinal Properties.—Important as an ingredient of ointments and plasters, but never used internally.

Contained in Charta Epispastica, Emplastra, and Unguentum Terebinthinæ.

Preparations.

EMPLASTRUM RESINÆ. *Syn.* Adhesive Plaster.

Resin, in powder, 2; Litharge Plaster, 16; Curd Soap, 1: melt the Plaster with a gentle heat, add the Resin and Soap, first liquefied, and mix. =(1 in 9½).

Now made with Curd Soap in place of Hard Soap.

(Emplastrum Resinæ, U.S.; Emplastrum Adhesivum, Austr., Belg., Dan., Dutch, Ger., Hung., Norw., Russ., Swed., and Swiss; Emplastro de Chumbo Composto, Port.; Emplasto de Diapalma; all differing in composition; not in Fr.)

Used chiefly for strapping wounds and ulcers.

UNGUENTUM RESINÆ.

Resin, in coarse powder, 4; Yellow Wax, 2; Simple Ointment, 8; Almond Oil, 1: melt with a gentle heat, strain while hot through flannel, and stir till cool. =(1 in 3¾).

(Dan. and Norw., Ung. Basilicum Flavum and Nigrum; Fr., Onguent Basilicum; Ger. and Russ., Ung. Basilicum; Port., Ung. de Resina; Span., Ung. de Colofonia Palida; Swed., Ung. Terebinthinæ Resinosum; Swiss, Ung. Resinosum; all differing in composition.)

A stimulating dressing for indolent ulcers.

Not Official.

RESORCIN.

METADIOXYBENZOLUM.

$C_6H_4(HO)_2$, eq. 110.

White crystals obtained by the destructive distillation of Brazilin or by fusing Benzoldisulphonate of Potassium with Caustic Potash.

Solubility.—4 in 3 of Water; 4 in 3 of Rectified Spirit; 1 in 1 of Glycerine; 1 in 1 of Ether.

Test.—Its aqueous solution becomes deep violet on the addition of Ferric Chloride.

(Dutch and Hung.; not in the others.)

Medicinal Properties.—Antiseptic and antipyretic. Has been employed in the treatment of acute fevers; also as a **spray** in diphtheria and whooping-cough.

In large doses it produces profuse perspiration, flushing of the face, and giddiness. Dr. Murrell describes a case of poisoning by 2 drms. of it which nearly proved fatal. —*M.T.* '81, ii. 487.

1½ to 5 grs. dissolved in 2 oz. of Infusion of Chamomile for cholera infantum.—*L.M.R.* '81, 227, 413.

An **ointment** (1 in 8) promotes desquamation in scarlet fever.—*B.M.J.* '87, ii. 241. Resorcin spray in diphtheria.—*B.M.J.* '88, i. 435. For gastric ulcer or catarrh.—*L.* '88, i. 570.

Dose.—5 to 20 grs.

Antidotes.—Good Red Wine, Bordeaux, or Burgundy.—*P.J.* xv. 1067.

White of egg; wash out the stomach with Soda or Saccharated Lime well diluted; stimulants; Atropine; Nitrite of Amyl.—(*Murrell.*)

Preparations.

LOTIO RESORCINI (Andeer's Lotion) *B.S.H.*—Resorcin 40 grs., Water 1 oz. Used as an antiseptic and stimulant in foul and syphilitic ulcerations, and to allay irritation in chronic eczema and psoriasis.

RESORCIN PLASTER MULL (Unna).—Contains ¾ gr. to the square inch.

RHAMNI FRANGULÆ CORTEX.

FRANGULA BARK.

The dried bark of *Rhamnus Frangula.*

Collected from the young trunk and moderate-sized branches, and kept at least one year before being used.

(Austr., Dan., Dutch, Ger., Norw., Russ., and Swed., Cortex Frangulæ; Port., Amieiro Negro; U.S., Frangula; not in the others.)

Medicinal Properties.—A laxative or purgative for delicate constitutions and the aged. It is said to be without irritating properties.

Preparations.

EXTRACTUM RHAMNI FRANGULÆ.

Macerate 16 of Rhamnus Frangula Bark, in No. 40 powder, with 40 of Proof Spirit for forty-eight hours in a closed vessel, pack in a percolator, and when the fluid ceases to pass continue the percolation with Water until 60 have been collected or the Rhamnus is exhausted; evaporate the liquor by a water bath to a suitable consistence.

Dose.—15 to 60 grs.

(Dutch, Russ., and Swed., with boiling Water; not in the others.)

EXTRACTUM RHAMNI FRANGULÆ LIQUIDUM.

Boil 16 of Rhamnus Frangula Bark in coarse powder, in 3 or 4 successive portions of Distilled Water until exhausted; evaporate the liquors by a water bath to 12; when cold, add 4 of Rectified Spirit, let it stand for some hours, then filter and make up to 16 with Distilled Water.

Dose.—1 to 4 drms.

(U.S. cold Water and Rectified Spirit; not in the other Pharmacopœias.)

RHAMNI PURSHIANI CORTEX.

SACRED BARK.

Syn. Cascara Sagrada.

The dried bark of *Rhamnus Purshianus.*

(Austr.; not in the others.)

Medicinal Properties.—Laxative. Is especially indicated in chronic constipation, and an atonic condition of the stomach and bowels. It has also been recommended in rheumatism.

Preparations.

EXTRACTUM CASCARÆ SAGRADÆ.

Macerate 16 of Cascara Sagrada, in No. 40 powder, in 40 of Proof Spirit for forty-eight-hours; pack in a percolator, and when the fluid ceases to pass, continue the percolation with Water until 60 of liquid is obtained, or the Cascara is exhausted: evaporate the liquor to a suitable consistence.

Dose.—2 to 8 grs.

(Not in the Foreign Pharmacopœias.)

EXTRACTUM CASCARÆ SAGRADÆ LIQUIDUM.

Boil 16 of Cascara Sagrada in coarse powder, in 3 or 4 successive quantities of Distilled Water until it is exhausted: evaporate the strained liquors by a water bath to 12, and when cold add 4 of Rectified Spirit; let it stand for some hours, then filter and make up to 16 with Distilled Water.

B.P. Dose.—$\frac{1}{2}$ to 2 drms. Usual dose, 15 to 30 minims.

(Austr.; not in the others.)

Given with Ferri et Ammonii Citras and Ammonia.—*B.M.J.* '88, ii. 691.

Not Official.

CAPSULES OF CASCARA.—Two strengths, containing 15 and 30 minims respectively of Fluid Extract in a capsule. In many cases 30 minims is too large a dose.

ELIXIR OF CASCARA (Kasak).—Under this title is sold a proprietary preparation of Cascara, which is palatable, uniform, and reliable.

Dose.—1 or 2 drms. for a child, $\frac{1}{2}$ oz. for an adult.

ELIXIR CASCARA SAGRADA, (*B.P.C.*).—Tincture of fresh Orange Peel, 2; Rectified Spirit, 1; Cinnamon Water, 3; Syrup, 6; Liquid Extract of Cascara, 8: mix.

Dose.—15 minims to 2 drms.

EXTRACTUM CASCARA LIQUIDUM INSIPIDUM.—It having been stated that the disagreeable bitterness of Cascara Sagrada could be prevented or removed by treatment with Magnesia, "tasteless Extracts" have lately attracted considerable attention. Evidence both as to their tastelessness and efficacy is decidedly conflicting. In any case their action seems uncertain and the balance of evidence is against them.—*P.J.* xix. 254—257; *P.J.* xx. 491; *C.D.* '88, ii. 169, 267, 376; *C.D.* '89, i. 19.

SYRUPUS CASCARA SAGRADA, (*B.P.C.*).—Liquid Extract of Cascara Sagrada, 4; Liquid Extract of Liquorice, 3; Carminative Tincture, $\frac{1}{4}$; Syrup to make 20: mix

Dose.—1 to 4 drms.

RHEI RADIX.

RHUBARB ROOT.

The root more or less deprived of its bark, sliced and dried, of *Rheum palmatum*, *Rheum officinale*, and probably other species, collected and prepared in China and Thibet.

Imported from Shanghai and Canton.

Tests.—Free from decay, not worm-eaten, Boric Acid does not turn the yellow exterior brown. In the powder, adulterations are detected with difficulty.

(In all the Pharmacopœias. Fr., Rhubarbe; Port., Rhuibarbo; Span., Ruibarbo.)

Medicinal Properties.—Cathartic and astringent, the latter property not interfering with the former, as the purgative effect precedes the astringent, and therefore is useful in diarrhœa when an aperient is indicated. Given in dyspepsia attended with constipation. It is non-irritant, and increases the effect of other cathartics. It is frequently combined with an antacid.

Is a certain though not powerful hepatic stimulant.—Dr. Rutherford.

4 grains of Powdered Rhubarb and 1 minim of Glycerine make a nice pill.

Dose.—As a stomachic, 1 to 5 grs. of the powder: as a purgative, 10 to 20 grs.

Tho *Rheum ponticum* is grown at Banbury, in Oxfordshire. In four or five years the roots attain the size of a man's arm; in drying it loses 75 per cent., and yields a fine yellow powder. A good deal is exported, and some is used in this country.

Bicarbonate of Sodium in equal weight with Powdered Rhubarb takes off the astringency, and covers the taste; the addition of Peppermint Water still further hides it; or 1 drop of Oil of Peppermint, 30 grs. of Sugar, will disguise the taste of 15 grs. of Powdered Rhubarb. 1 drop Oil of Nutmeg, 30 grs. Sugar, and 10 grs. of powdered Rhubarb, make a good draught.

Preparations.

EXTRACTUM RHEI.

Rhubarb Root, in No. 40 powder, 16; Proof Spirit, 60; Distilled Water, a sufficiency: macerate the Rhubarb with 60 of the Spirit for forty-eight hours; pack in a percolator, and when the fluid ceases to pass, continue the percolation with Water until 100 of liquor has been collected or the Rhubarb exhausted. Evaporate the liquor by a water bath to a suitable consistence for forming pills.

This Extract is much better prepared by successive digestion and expression with Proof Spirit, as in the process for Ext. Calumbæ. After three expressions the quantity of extractive yielded to Water is very small.

Dose.—3 to 6 grs. Brit. Ph. dose, 5 to 15 grs.

(Austr., with boiling water; Belg., Dan., Fr., Hung., Port., Russ., Span., Swed., and Swiss, with water; Span., also alcoholic; Dutch, Ger., and Norw., with Spirit and water mixed; U.S. with Alcohol.)

INFUSUM RHEI.

Rhubarb Root, in thin slices, 1; boiling Distilled Water, 40: infuse half an hour, and strain. =(1 in 40).

Time reduced from one hour to half an hour.

Dose.—1 to 2 oz.

(Belg., 1 and $13\frac{1}{3}$ (at 90° C.); Fr. 1 in 200 cold; Span., 1 in 30; Infusum Rhei Alkalinum.—Dan. and Norw., 1 in 8, Belg. and Swed., 1 in 10; Tinctura Rhei Aquosa.—Austr., 1 in 15 cold Water, Hung., 1 in 16, Ger. and Swiss, 1 in 10 cold Water; Dutch, 1 Extract in 20; not in the others.)

PILULA RHEI COMPOSITA.

Rhubarb Root, in fine powder, 3 oz.; Socotrine Aloes, in fine powder, $2\frac{1}{4}$ oz.; Myrrh, in fine powder, $1\frac{1}{2}$ oz.; Hard Soap, in powder, $1\frac{1}{2}$ oz.; English Oil of Peppermint, $1\frac{1}{2}$ drms.; Glycerine, 1 oz.; Treacle, by weight, about 3 oz.: mix the powders with the Oil, add the Glycerine and Treacle, and beat into a mass.

Now made with Glycerine, but too much of both Glycerine and Treacle is ordered in *B. P.*

Dose.—5 to 10 grs.

(U.S. contains neither Soap, Glycerine, nor Treacle; not in the others.)

PULVIS RHEI COMPOSITUS. *Syn.* Dr. Gregory's Powder.

Rhubarb Root, in powder, 2; Light Magnesia, 6; Ginger, in powder, 1: mix. =(1 in $4\frac{1}{2}$).

Dose.—30 to 60 grs. 5 to 10 grs. for children.

(Ger. (Pulvis Magnesiæ cum Rheo), and Span. (Polvo de Magnesia con Ruibarbo), Carb. Magnes. 60, Sacch. 40, Rhei 15, Ol. Fœnic. $1\frac{1}{3}$; Dan., Norw., and Swed. (Pulvis Magnesiæ c. Rheo), Carb. Magnes. 1, Sugar 1, Rhubarb 1, Oil of Fennel $\frac{1}{100}$; Russ. Carb. Magnes. 4, Sugar 2, Rhubarb 1, Oil of Fennel $\frac{1}{25}$; U.S. Rhubarb 5, Magnesia 13, Ginger 2; not in the others.)

SYRUPUS RHEI.

Rhubarb Root, in No. 20 Powder, 2; Coriander Fruit, in No. 20 Powder, 2; Refined Sugar, 24; Rectified Spirit, 8; Distilled Water, 24: mix the Rhubarb and Coriander, pack them in a percolator, pass the spirit and water, previously mixed, slowly through them, evaporate the liquid that has thus passed until it is reduced to 14, and in this, after it has been filtered, dissolve the Sugar with heat.

The product should weigh nearly 40, and its sp. g. be about 1·310.

It is now a rather thinner syrup, and is very apt to ferment.

By evaporation as above almost the whole aroma of the Coriander is driven off. Judging from the strong flavour of commercial samples we should say that in practice the B.P. process was largely modified, and Ol. Coriand. added at the finish.

Dose.—1 to 4 drms.

(Austr., 1 in 26, Dan., 1 in 14, both with Carb. of Potass; Belg., Syr. Rhei, and Syr. Rhei Compositus, both 1 in 20; Dutch, 1 in 20, Hung., 1 in 27, Swed., 1 in 14, all with Carb. of Soda; Ger. and Russ., with Cinnam. and Carb. of Potass, 1 in 20; Port., 1 in 20; U.S., Syr. Rhei, 1 in 11, and Syr. Rhei Aromaticus, 1 in 50; Fr., Sirop de Rhubarbe Composé; all differ from Brit.)

TINCTURA RHEI. Deposits slightly when kept.

Rhubarb Root, in No. 20 Powder, 2; Cardamom Seeds, freed from the pericarps, bruised, $\frac{1}{4}$; Coriander, bruised, $\frac{1}{4}$; Saffron, $\frac{1}{4}$; Proof Spirit, 20: macerate for forty-eight hours with 15 of the spirit, agitating occasionally, pack in a percolator, and when it ceases to drop, pour on the remaining spirit, press the marc, filter, and add Proof Spirit to make 20. =(1 in 10).

Dose.—As a stomachic, 1 to 2 drms.; as a purgative, $\frac{1}{2}$ to 1 oz.

(Belg. and Fr., Rhubarb only, 1 in 5; Dan., Norw. and Swed. (Tinct. Rhei Amara) 1 and 10; Port., 1 and 5; Russ. (Tinct. Rhei Co.), 1 in 12; U.S., Rhubarb 3, Cardamom $\frac{1}{2}$, Diluted Alcohol to make 25: by weight. Not in the others.)

VINUM RHEI. Deposits very much when kept.

Rhubarb Root, in coarse powder, $1\frac{1}{2}$ oz.; Canella Bark, in coarse powder, 60 grs.; Sherry, 20 oz.: macerate seven days, filter, and add Sherry to make 20. =(about 1 in 14).

Dose.—1 to 2 drms.

(U.S., 1 in 10; Belg., about 1 in 17; Fr., 3 in 50; Austr., Ger. and Russ., Tinct. Rhei Vinosa with Orange Peel and Cardamoms Dan., 1 in 10 with Cardamoms and Gentian.)

Not Official.

EXTRACTUM RHEI COMP.

Belg., Dutch and Swiss, Ext. Rhei 3, Ext. Aloes 1, Resina Jalapæ ½, Soap ½.
Dan., Ext. Rhei 16, Ext. Aloes 5, Resin Jalap 4, Soap 4.
Ger., Ext. Rhei 3, Ext. Aloes 1, Resina Jalapæ ½, Soap 2.
Norw. and Swed., Ext. Rhei 5, Ext. Aloes 2, Resin Jalap 1½, Soap 1½.
Russ., Ext. Aloes 1, Ext. Rhei 3, Jalapini Saponis 1, Water 4, Spirit 1.

RHŒADOS PETALA.

RED-POPPY PETALS.

The fresh petals of *Papaver Rhœas*; from indigenous plants. Chiefly used as a colouring agent.

(Austr., Dan., Russ. and Swiss, Flores Rhœados; Belg., Flores Papaveris Rhœados; Dutch, Petala Rheados; Fr., Coquelicot; Span., Amapola: not in the others.)

Preparation.

SYRUPUS RHŒADOS. Crystallizes when kept.

Fresh Red Poppy Petals, 13; Refined Sugar, 36; Distilled Water, 20, or a sufficiency; Rectified Spirit, 2½: add the petals gradually to the water, heated in a water bath, frequently stirring, remove the vessel, and macerate twelve hours, press out the liquor, strain, add the Sugar, and dissolve by heat; when nearly cold, add the Spirit, and Distilled Water to weigh 58, and measure 43½. Sp. g. 1·330. =(1 in 3½).

Dose.—1 to 2 drms.

(Belg., Dan., Dutch, Fr., Russ., Span. and Swiss, all different strengths; not in the others.)

RICINI OLEUM.

CASTOR OIL.

The Oil expressed from the seeds of *Ricinus communis*. Pale straw. Sp. g. 0·964 at 60° F., and ·949 at 100° F.—*P.J.* xx. 386.

Solubility.—Entirely soluble in all proportions of Absolute Alcohol, Ether, Oil of Turpentine, and Glacial Acetic Acid; 1 in 3½ of Rectified Spirit.

Test.—When 20 c.c. each of Castor Oil and Petroleum Ether (sp. g. ·7033) are well shaken together in a tall tube and kept for some time at exactly 60° F., the mixture will not become clear, and a layer of Petroleum Ether will collect on the surface. If the mixture be raised to 70° F. it will become clear. If the Castor Oil be adulterated with 5 p.c. of another fixed oil, the mixture will be clear and there will be no separation of Ether.—*P.J.* xx. 386.

(In all the Pharmacopœias. Fr., Huile de Ricin; Port., Oleo de Ricino; Span., Aceito do Ricino.)

Medicinal Properties.—A mild and speedy cathartic. Particularly applicable to constipation from indurated fæces, or after swallowing acrid substances, or on the accumulation of acrid secretions. Used in diseases attended with irritation or inflammation of the bowels, as colic, diarrhœa, and dysentery. The safest cathartic for infants, to whom a larger relative dose than to adults may be given; a small quantity in emulsion relieves infantile spasms. It may be administered in an enema with some mucilaginous fluid.

The decoction of the leaves of *Ricinus* applied to the breast is said to produce an abundant supply of milk.

Stimulates the intestinal glands, but not the liver.—Dr. Rutherford.

Dose.—¼ to 1 oz. for adults, 1 to 2 drms. for infants.

One of the least disagreeable modes of taking Castor Oil is to pour it on to some milk contained in a wine glass, the interior and edges of which have been moistened with milk.

Contained in Collodium Flexile, Linimentum Sinapis Comp., and Pil. Hydrarg. Subchloridi Comp.

Not Official.

CAPSULES OF CASTOR OIL.—Flexible capsules containing 30 minims and 60 minims in each.

EMULSIO OLEI RICINI.—Castor Oil, ½ oz.; Mucilage of Acacia, ½ oz.; Syr. Ginger, ¼ oz.; Cinnamon Water, 1 oz.: mix.

Castor Oil, ½ oz.; Yolk of Egg, ¼ oz.; Syrup, ¼ oz.; Peppermint Water, 1 oz.: mix.

Castor Oil, 2 drms.; Solution of Potash, 20 mins.; Syrup, 5 drms.; Water to 2 oz.

ENEMA OLEI RICINI.—Castor Oil, 2 oz.; Mucilage of Starch, 18 oz.

ROSÆ CANINÆ FRUCTUS.

FRUIT OF THE DOG ROSE. HIPS.

The ripe fruit of *Rosa canina;* and other indigenous allied species.

(Fr., Cynorrhodon; Port., Rosa Canina; not in the other Pharmacopœias.)

Medicinal Properties.—Slightly refrigerant and astringent. Chiefly used in confection, also as a pill basis, and for making electuaries and linctuses.

Preparation.

CONFECTIO ROSÆ CANINÆ.

Hips, deprived of their seed-like fruits, 1; Refined Sugar, 2: beat the Hips to a pulp in a stone mortar, rub the pulp through a sieve, add the Sugar, and mix thoroughly. =(1 in 3).

Dose.—60 grs. or more.

(Fr., Conserve de Cynorrhodons; not in the other Pharmacopœias.)

ROSÆ CENTIFOLIÆ PETALA.

CABBAGE-ROSE PETALS.

The fresh petals, fully expanded, of *Rosa centifolia;* from plants cultivated in Britain.

(Austr. and Ger., Flores Rosæ; Belg., Flores Rosæ Pallidæ; Dan. and Russ., Flores Rosæ Centifoliæ; Fr., Rose à Centfeuilles; Hung., Rosa; Norw., Petala Rosæ; Port., Rosas Pallidas; Span., Rosa Palida; Swed., Petala Rosæ Centifoliæ; U.S., Rosa Centifolia. Not in Dutch or Swiss.)

Medicinal Properties.—Slightly laxative, and sometimes given with cathartics, but chiefly used in the preparation of rose-water.

Preparation.

AQUA ROSÆ.

Fresh Petals, 1; Water, 5: distil 1. =(1 in 1).

An agreeable vehicle for medicines; employed in making lotions.

Dose.—1 to 2 oz.

(Same as Fr., Port. and Span.; Dan. and Swed., 1 in 3; Belg., Dutch and U.S., 1 in 2½; Austr., Ger. and Hung., 1 in 4000, and Russ., 1 in 6000, all with Otto.)

An equivalent quantity of petals, preserved whilst fresh with common salt, may be used.

ROSÆ GALLICÆ PETALA.

RED ROSE PETALS.

The unexpanded petals of *Rosa Gallica*, fresh and dried; from plants cultivated in Britain.

(Belg., Flores Rosæ Rubræ; Dan., Russ., and Swiss, Flores Rosæ Gallicæ; Fr., Rose Rouge; Dutch, Petala Rosæ; Port., Rosas Rubras; Span., Rosa Rubra; Swed., Petala Rosæ Gallicæ; U.S., Rosa Gallica; not in the others.)

Medicinal Properties.—Astringent. Often used on account of their colouring matter.

Preparations.

CONFECTIO ROSÆ GALLICÆ.

Fresh Red Rose Petals, 1; Refined Sugar, 3: beat the petals to a pulp in a stone mortar, add the Sugar, and rub well together. =(1 in 4).

Used as a pill basis. Applied to aphthous conditions of the mouth as a linctus.

Dose.—30 to 60 grs., or more.

(Belg., Port., Span. and Swiss, with powdered Petals, Sugar, and Rose Water; Fr., with powdered Petals, Sugar, Glycerine, and Rose Water; U.S., with powdered Petals, Sugar, Honey, and Rose Water; Swed., with Rosa Centifolia and Sugar; not in the others.)

INFUSUM ROSÆ ACIDUM.

Dried Red Rose Petals, broken up, 1; Diluted Sulphuric Acid, ½; boiling Distilled Water, 40: infuse for half an hour with the Acid and Water; strain. =(1 in 40).

A similar infusion was in use in 1674.

Astringent. An excellent vehicle for more powerful medicines. An agreeable gargle; but Borax and Alkalies change the colour to green.

Dose.—1 to 2 oz.

(Fr., 1 in 100, without acid; Port. (Infuso de Rosas Composto), Red Rose Petals 5, Dilute Sulphuric Acid 2, Boiling Water 200; Swed. (Infusum Rosæ Acidulum), Red Rose Petals 3, Dilute Sulphuric Acid 2, Sugar 8, Boiling Water 200. Not in the others.)

SYRUPUS ROSÆ GALLICÆ.

Dried Red Rose Petals, 1; Refined Sugar, 15; boiling Distilled Water 10: infuse the Petals in the Water two hours, squeeze through calico, heat the liquor to the boiling-point, and filter; add the Sugar, and dissolve with heat. The product should weigh 23, and measure 17¼. Sp. g. 1·335. =(1 in 17¼).

Mildly astringent. Used to add to mixtures on account of its colour.

Dose.—1 to 2 drms.

(Russ. 3 times stronger; Belg. 1 in 10; U.S. Fluid Extract 1, Syrup 9; not in the other Pharmacopœias.)

Not Official.

INFUSUM ROSÆ CUM ACIDO NITRICO.—Rose Petals, broken small, 2; Diluted Nitric Acid, ½; cold Distilled Water, 40: infuse two hours, frequently stirring, strain, and add Powdered Sugar, 1. Used for Quinine draughts.

Neither Sulphuric Acid nor a neutral Sulphate should be prescribed with Quinine in this infusion, for with either it will become turbid.

Not Official.

ROSÆ OLEUM.

OTTO OF ROSE.

A volatile oil distilled from the fresh flowers of *Rosa Dmascena.*

A pale yellowish liquid, in which, when cooled, crystalline scales are formed, but which disappear at about 60° F. (15·5° C.). In some samples of oil the Stearoptene is so abundant that except, in warm weather, the oil is almost solid.

(Austr., Belg. (Essentia), Dutch, Fr., Ger., Hung., Norw., Port. (Essencia), Russ., Swiss, and U.S.; not in Dan., Span. or Swed.)

Used as a perfume.

ROSMARINI OLEUM.

OIL OF ROSEMARY.

Syn. OLEUM ANTHOS.

The Oil distilled from the flowering tops of *Rosmarinus officinalis* Pale straw. That distilled in Britain is superior to the imported.

Ol. Rosmarini Exot. generally shows a sp. g. about ·885, but the English oil about ·905, the latter figure agreeing with most of the published gravities.

Solubility.—In all proportions of Absolute Alcohol; 2 in 1 of Rectified Spirit; sparingly in Proof Spirit.

Test.—20 minims mixed with an equal bulk of Rectified Spirit does not give any colouration with 1 drop of a dilute solution of Ferric Chloride: this distinguishes it from a large number of essential oils.

When adulterated with heavy Petroleum Oil, it can be detected by heating it in an open basin on a water-bath until the odour of Rosemary disappears; the Petroleum will be left.

Solid Magenta imparts no colour to Oil of Rosemary, but if Alcohol be present the dye dissolves.—*P.J.* xx. 415.

(In all the Pharmacopœias; Belg., Essentia Rosmarini; Dan., Norw. and Swed., Ætheroleum Rosmarini; Fr., Huile Volatile de Romarin; Port., Essencia de Alecrim; Span., Esencia de Romero.)

Medicinal Properties.—Chiefly used for its odour, which is disliked by insects. It is also used in hair lotions and liniments.

Dose.—1 to 5 minims.

Contained in Linimentum Saponis, and Tinctura Lavandulæ Composita.

Preparation.

SPIRITUS ROSMARINI.

Oil of Rosemary, 1; Rectified Spirit, 49: dissolve. =(1 in 50).

Dose.—30 to 60 minims.

(Austr., Swed. and Swiss, from leaves; Belg., Essentia Rosmarini, 1 in 100; Fr. (Teinture d'Essence de Romarin), and Norw., 1 in 50; Port. (Esperito d'Alecrim), and Span. (Alcohol de Romero), from flowering tops; Russ., 1 in 96. Not in the others.)

RUTÆ OLEUM.

OIL OF RUE.

The Oil distilled from the fresh herb of *Ruta graveolens.* Pale straw. Sp. g. ·870.

Solubility.—In all proportions of Absolute Alcohol; sparingly in Rectified Spirit.

(Belg., Essentia Rutæ; Fr., Huile Volatile de Rue; Port., Esseneia de Arruda; Span., Eseneia de Ruda; Swiss, Russ. and U.S.; not in the others.)

Medicinal Properties.—Stimulant and antispasmodic. Given in flatulence, hysteria, convulsions, and amenorrhœa. A powerful topical stimulant and rubefacient.

Dose.—1 to 4 minims in emulsion.

Not Official.

CONFECTIO RUTÆ.—Fresh Leaves, 1; Refined Sugar, 3: beat into a mass.

ENEMA RUTÆ.—2 to 4 drms. of Confection; warm Water, 10 oz.: administered for flatulent distension in children.

For adults.—Oil of Rue, 20 mins.; Mucilage of Starch, 6 oz.

SYRUPUS RUTÆ.—1 minim of Oil to each ounce of Syrup. **Dose.**—½ to 1 drm for a child.

SABADILLA.

CEVADILLA.

The dried ripe seeds of *Schœnocaulon officinale.*

The seeds are sometimes imported in, or mixed with, their pericarps, but these should be rejected before the seeds are used.

Imported from Vera Cruz and Mexico.

(Austr., Belg., Dan., Dutch, Fr. (Cevadille), Hung., Port. (Cevadilha), and Russ.; not in the others.)

Chiefly introduced into the Pharmacopœia for the purpose of making Veratrine.

SABINÆ CACUMINA.

SAVIN TOPS.

The fresh and dried tops of *Juniperus Sabina,* collected in spring from plants cultivated in Britain.

(Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Norw., Port., Russ., Swed., Swiss and U.S.; not in Span.)

Medicinal Properties.—A powerful local and general irritant, used chiefly for keeping open issues. It is a powerful emmenagogue. Used occasionally in gout and chronic rheumatism.

B.P. Dose.—4 to 10 grs.

Antidotes.—Emetics should first be given; Castor oil, Linseed poultices to the abdomen, opiates and demulcents.

Preparations.

OLEUM SABINÆ.

The Oil distilled in Britain from fresh Savin.

Sp. g. 0·910.

Solubility.—4 in 1 of Rectified Spirit, in all proportions of Absolute Alcohol.

B.P. Dose.—1 to 4 minims.

(Belg., Dutch, Norw., Port., Russ., Swed. and U.S.; not in the others.)

TINCTURA SABINÆ.

Savin Tops, dried and coarsely powdered, 1; Proof Spirit, 8: macerate forty-eight hours, with 6 of the spirit, agitating occasionally; pack in a percolator, and when it ceases to drop, pour on the remaining spirit, press and filter, and add Proof Spirit to make 8. =(1 in 8).

B.P. Dose.—20 to 60 minims.

(Belg., Fresh herb 1, Alcohol (92°) 1; Russ., 1 and 10; both by weight; not in the others.)

UNGUENTUM SABINÆ.

Fresh Savin Tops, bruised, 8; Yellow Wax, 3; Benzoated Lard, 16: melt the lard and the wax together on a water bath, add the Savin, digest twenty minutes, strain and press through calico. =(about 1 in 2).

Should be freshly prepared, as it does not keep.

To keep up suppuration from a blister or issue by preventing it from healing, and for application to indolent ulcers.

(Belg., Ext. Sabinæ 1, Simple Ointment 9; Dan., Savin Tops 4, Spirit 8, Lard 12, Yellow Wax 3; Ger., Extract 1, Wax Ointment 9; Russ., Extract 1, Spirit 1, Lard 9; Swed., Tops 4, Yellow Wax 3, Lard 12; not in the others.)

Not Official.

SACCHARINUM.

BENZOYL-SULPHONIC-IMIDE.

A white powder, obtained indirectly from Coal-tar.

A very minute quantity, 1 in 100,000, dissolved in Water, imparts to it a sweetish taste.

Dr. Fahlberg, the discoverer and patentee, has recently admitted (*P.J.* xx. 501) that commercial Saccharin is not a pure product, but is "standardized" to 300 times the sweetening power of cane sugar, the pure chemical (Saccharin puriss.), being equal to 500 times its weight of Sugar. Both in this country and on the Continent, however, a considerably lower value is generally assigned to it. The proportion of impurity may be estimated by treatment with Ether, in which the pure Salt is completely soluble.

Solubility.—1 in 400 of cold Water; 1 in 28 of boiling Water; 1 in 30 of Rectified Spirit; 1 in 100 of Ether; 1 in 500 of Chloroform; 1 in 48 of Glycerine.

Tests.—·18 gramme of Saccharin suspended in 5 c.c. of Water should dissolve on the addition of 1 c.c. of normal Potash Solution to form a neutral liquid; this liquid if heated to boiling after the addition of several c.c. of normal Potash Solution should not become coloured. Saccharin should not blacken when Sulphuric Acid is poured upon it; if the mixture be placed in boiling water for ten minutes there is an appearance of a faint brown colour, but no blackening. If Saccharin be washed on a filter with several times its quantity of Ether and the Ether mixed with ten times its quantity of Water, Ferric Chloride should not produce in it either a precipitate or a violet colour.

Medicinal Properties.—It is used as a substitute for Sugar in diabetes, one of Saccharin being equal (roughly) to 140 of Sugar. It is eliminated in the urine.

Preparations.

SACCHARINUM SOLUBILE.—A soluble Saccharinate of Sodium, containing about 90 per cent. of Saccharin. It is much more palatable than ordinary Saccharin, which leaves a disagreeable after-taste.

This powder is soluble 1 in 15 of Water.

ELIXIR SACCHARINI, (*B.P.C.*).—Saccharin, 480 grs.; Bicarbonate of Sodium, 240 grs.; Rectified Spirit, 2½ ozs.; Distilled Water to make 20 ozs. Dissolve the Saccharin and Bicarbonate of Sodium in 10 ozs. of the Water, add the Spirit, filter, and wash the filter with Water to make 20 ozs. Each fluid drachm contains 3 grains of Saccharin.

Dose.—5 to 20 minims.

TABELLÆ SACCHARINI, SACCHARINE DISCS.—Contain ½ grain Saccharin in each. Should be readily soluble in Water and should not contain Starch or Sugar.

SACCHARUM LACTIS.

SUGAR OF MILK. LACTOSE.

$C_{12}H_{24}O_{12}$, eq. 360.

A crystallized Sugar obtained from the Whey of Milk by evaporation; manufactured largely in Switzerland. Nearly white.

The taste should be but slightly sweet, and only traces of ash should remain on ignition.

Solubility.—1 in 6 of cold Water; 1 in 1 of boiling Water; almost insoluble in Rectified Spirit.

(In all the Pharmacopœias. Fr. (Sucre de Lait), Port. (Assucar de Leite); Span. (Lactosa).

Medicinal Properties.—As a non-nitrogenous article of diet in consumption and other pulmonary diseases, and in cases of extreme irritability of the stomach, following profuse loss of blood. Used to mix with the food of children; dissolved in water, and mixed with cows' milk, it forms a good substitute for that of the mother. Useful for rubbing with strong medicinal powders, in order to divide them.

Dose.—60 to 120 grs. or more in Water.

Used in the preparation of Pulvis Elaterini Compositus.

SACCHARUM PURIFICATUM.

REFINED SUGAR.

Syn. SUCROSE.

$C_{12}H_{22}O_{11}$, eq. 342.

In the former Pharmacopœias, Cane Sugar was specified. Now Sucrose from any source may be used so long as it answers the tests. Compact crystalline conical loaves known in commerce as Lump Sugar.

Test.—Readily and completely soluble in Water, forming a clear bright syrup, which yields no red or yellowish precipitate, or scarcely a trace, on heating it to near the boiling point of water for a short time with a little Solution of Sulphate of Copper and excess of Solution of Potash.

Solubility.—100 in 45 of Water measures 113; 1 in 100 of Rectified Spirit.

(In all the Pharmacopœias except Norw. and Swed.; Fr., Sucre de Canne; Port., Assucar; Span., Azucar.)

Medicinal Properties.—Demulcent, used in catarrhal affections in the form of candy, syrup, etc. Employed in pharmacy to render oils miscible with water. Enters into the composition of several confections, mixtures, pills, powders, all the syrups, and lozenges.

Preparation.

SYRUPUS.

Refined Sugar, 6; Distilled Water, 3: dissolve the sugar in the water with the aid of heat, and when cool add water to weigh 9, and measure very nearly 7. Sp. g. 1·330. =(1 in $1\frac{1}{6}$).

(In all the Pharmacopœias. Port., Xarope Commun; Span., Jarabe Simple.)

It is convenient to remember that 7 measures of Syrup contain 6 of Sugar.

Used in the preparation of Confectiones Opii and Scammonii, Misturæ Creasoti and Cretæ, Pilula Cambogiæ Composita, Syrupi Aurantii, Chloral, and Zingiberis, and in Tinctura Chloroformi et Morphinæ.

Not Official.

SALEP.

The prepared tubers of Orchis Moris, and other species of Orchis.

(Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Norw., Port., Russ., Span., Swed., and Swiss; not in U.S.)

Medicinal Properties.—Mucilaginous and nutrient.

Preparation.

MUCILAGO SALEP.—Powdered Salep 1: agitate well with cold Water 10; pour on to this, boiling Water 90, and stir till cold.

(Belg., Dutch, Ger., Norw., Russ., Swed., and Swiss. Dan., Mixtura Saleb, same strength, but containing Syrup of Poppies.)

Salib Misri, the Salep of the Indian Bazaars, is derived from a species of Eulophia.

SALICINUM.

SALICIN.

$C_{13}H_{18}O_7$, eq. 286.

A crystalline glucoside obtained by treating the bark of Salix alba, and other species of Salix, and the bark of various species of Populus, with hot water, removing tannin and colouring matter from the decoction, evaporating, purifying, and recrystallizing.

Colourless, silky, acicular crystals and laminæ; bitter and inodorous.

Solubility.—1 in 28 of Water; 1 in 1 of boiling Water; 1 in 60 of Rectified Spirit; insoluble in Ether.

Tests.—When ignited it emits vapours having the odour of meadowsweet, and leaves no residue; cold concentrated Sulphuric Acid dissolves it, forming a red colour.

(Port. and U.S.; not in the other Pharmacopœias.)

Medicinal Properties.—Antipyretic and tonic; specially recommended in acute rheumatism.

Dose.—5 to 30 grs., frequently repeated.

Not Official.

SALIX NIGRA.—The bark of this tree has been recommended as a sexual and general sedative.—*B.M.J.* '87, ii. 237; *L.* '88, i. 869.

Its virtues are probably due to Salicin which exists in all species of Salix (Willow).

Not Official.

SALOLUM.

SALOL.

$C_7H_5O_3.C_6H_5$.

A white crystalline powder having a weak aromatic odour and taste. It splits up into 60 p.c. Salicylic Acid and 40 p.c. Carbolic Acid on being warmed with an alkali. Melts at 42° C. (107·5° F.).

Solubility.—Insoluble in cold Water, 1 in 20 of Rectified Spirit, 4 in 3 of Ether, 8 in 3 of Chloroform.

Tests.—It dissolves on boiling with several times its weight of Solution of Soda, and the liquid, when cold and acidulated with Hydrochloric Acid, gives off the odour of Phenol, and yields a white precipitate; the latter, when separated by filtration, washed and dissolved in hot water, gives the salicylic violet colouration with Solution of Perchloride of Iron.

Medicinal Properties.—Antipyretic and antiseptic. It passes through the stomach unchanged, and is decomposed in the duodenum by the alkali of the pancreatic juice. It has been recommended in acute and chronic rheumatism.

In catarrh of the bladder.—*B.M.J.* '87, ii. 1438.

Dose.—10 to 15 grains frequently in cachets or suspended with Mucilage of Acacia or Tragacanth.

SAMBUCI FLORES.

ELDER FLOWERS.

The fresh flowers of *Sambucus nigra*, from indigenous plants.

(In all the Pharmacopœias. Fr., Sureau; Port., Sabugueiro; Span., Sauco. Used chiefly for preparing Elder Flower Water.

Preparation.

AQUA SAMBUCI.

Fresh Elder flowers, separated from the stalks, 1; Water, 5: distil 1. =(1 in 1).

Or an equivalent quantity of flowers preserved whilst fresh with common salt may be used.

(Belg., 3 in 10; Fr., Eau de Sureau, with dried flowers, 1 in 4; Dan., 1 in 10; Port., 1 in 4; Russ., Conc. 4 in 5, and Dil. 1 of Conc. in 7 Distilled Water; Span. and Swiss, 1 in 5; Swed., 1 in 3; not in the others).

Chiefly used as a perfume; it is, however, a pleasant vehicle for medicines, and may be used for lotions.

There is always a large quantity of vegetable matter in this water, which, causing it to become acid, impairs its odour. In practice, it is better to distil it of double strength and dilute it when required.

SANTALI OLEUM.

OIL OF SANDAL WOOD.

Syn. Oleum Santali Flavi.

The pale yellow oil distilled from the wood of *Santalum album.*

Sp. g.—Samples of oil distilled in Europe from East Indian wood, *Santalum album*, ·971—·980; oil distilled in India from *Santalum album*, ·990; oil distilled in London from wood of Fiji Tree, *Santalum Yasi*, ·977.—*P.J.* xvi. 822; *P.J.* xviii. 661; *C.D.* 89, i. 592.

It has been suggested that the high sp. g. of the Oil distilled in India may be due to a crude method of distillation.—*P.J.* xviii. 908.

Solubility.—In less than its own weight of Rectified Spirit.

(Austr., Span. (Essencia de Sandalo Cetrino), and U.S.; not in the other Pharmacopœias.)

Medicinal Properties.—Has been prescribed extensively for gonorrhœa as a mixture or in capsules.

Dose—10 to 30 minims.

Not Official.

MISTURA OLEI SANTALI.—Oleum Santali ♏ xxx; Mucilage of Acacia ʒi, Syrup ʒi; Tincture of Orange ʒss.; Water ℥ ss. for a dose three times a day.

CAPSULES OF SANDAL OIL.—Containing 10 and 20 minims in each.

SANTONICA.

The dried unexpanded flower-heads or capitula of *Artemisia maritima, var. Stechmanniana,* imported from Russia.

Dose.—10 to 60 grs.

(Austr., Belg., Dan., Dutch, Ger., Norw., Russ., Swed., and Swiss, Flores Cinæ; Fr., Semen Contra; Port. and Span., Santonico; U.S. Santonica; not in Hung.)

Used to prepare Santoninum.

SANTONINUM.

SANTONIN.

$C_{15}H_{18}O_3$, eq. 246.

A crystalline neutral principle, obtained from Santonica.

In colourless, flat, rhombic prisms, feebly bitter.

Solubility.—Sparingly in Water; 1 in 350 of boiling Water; 1 in 40 of Rectified Spirit; 1 in 4 of boiling Rectified Spirit; 1 in 160 of Ether; 1 in 2 of Chloroform; about 1 in 400 of Olive Oil; slightly in Glycerine and in Solution of Potash.

Tests.—Not dissolved by diluted mineral acids. Leaves no residue when burned with free access of air. Added to warm alcoholic Solution of Potash, it yields a violet-red colour.

(Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Norw., Port., Russ., Span., Swed., Swiss., and U.S.)

Medicinal Properties.—Anthelmintic. Useful both for round worms and thread-worms. It frequently affects the vision, causing all objects to appear yellow or green.

Santonin has been recommended as an emmenagogue, but writers differ as to its efficacy.—*L.* 85, ii. 430; *L.* 86, i. 61, 132, 286.

Dose.—2 to 3 grs. for children, in Castor Oil.

About three doses are sufficient; one every other night, followed by a brisk cathartic the morning after each dose.

Preparation.

TROCHISCI SANTONINI.

Made with Santonin, Sugar, and Gum Acacia.

Each lozenge contains one grain of Santonin.

(Austr., Belg., and Ger., $\frac{2}{5}$ grain; Dan., Norw., Russ., Swed., and Swiss, $\frac{1}{2}$ grain; Dutch, $\frac{3}{4}$ grain; Fr. and Port., $\frac{1}{6}$ grain; Span., $\frac{1}{3}$ grain in each lozenge; not in Hung. or U.S.)

SAPO ANIMALIS.

CURD SOAP.

A Soda Soap made with purified animal fat consisting principally of stearin.

White, or with a very light greyish tint, and nearly odourless.

Solubility.—Sparingly in Water; 1 in 1½ of boiling Water; partially in Rectified Spirit; almost entirely 1 in 2 of boiling Rectified Spirit.

Tests.—It does not impart a greasy stain to paper. The ash obtained by incineration does not deliquesce.

(Austr., Sapo Medicinalis; Belg., Sapo Animalis; Dan. and Norw., Sapo Butyraceus; Fr., Savon Animal; Hung., Sapo Albissimus Droguistarum; Port., Sabao Animal; Russ., Sapo Butyrinus, Sapo Sebacinus; Span., Jabon Animal; Swed., Sapo Butyrinus; Swiss., Sapo Sebaceus; Ger. and Russ., Sapo Medicatus, made with Lard and Olive Oil; not in Dutch or U.S.)

Used in the preparation of Emplastrum Resinæ, Extractum Colocynthidis Compositum, Linimentum Potasii Iodidi c. Sapone, Pilula Phosphori, Pilula Scammonii Composita; Suppositoria Acidi Carbolici cum Sapone, Acidi Tannici cum Sapone, and Morphinæ cum Sapone.

Preparations.

EMPLASTRUM SAPONIS.

Curd Soap, 6; Lead Plaster, 36; Resin, in powder, 1: to the lead plaster, previously melted, add the soap and the resin, first liquefied; then, constantly stirring, evaporate to a proper consistence.

=(1 of soap in 7⅙).

Now made with Curd Soap in place of Hard Soap.

(Emplastrum Saponis—Belg., 1 in 15; U.S., 1 in 10; Emplastrum Saponatum—Austr., 1 in 16; Dan., 1 in 11½; Ger., 1 in 17; Hung., about 1 in 15½; Russ., 1 in 15½; Swiss, about 1 in 17; Emplastrum Saponaceum—Swed., 1 in 9; Emplâtre de Savon—Fr., 1 in 18; Emplastro de Sabao—Port., 1 in 12½; Emplasto de Jabon—Span., about 1 in 16; not in Dutch or Norw.)

Equal weights of Emplastrum Plumbi and Emplastrum Saponis spread on Amadou are useful to shield any part of the foot from pressure of the boot.

EMPLASTRUM SAPONIS FUSCUM. *Syn.* EMPLASTRUM CERATI SAPONIS.

Curd Soap, in powder, 10; Yellow Wax, 12½; Oxide of Lead (in powder), 15; Olive Oil, 20; Vinegar, 160: boil the vinegar with the Oxide over a slow fire, or by a steam-bath, constantly stirring them until they unite; then add the soap, and boil again in a similar manner until most of the moisture is evaporated: lastly, mix with the wax previously dissolved in the oil, and continue the process till the product takes the consistence of a plaster.

Now made with Curd Soap in place of Hard Soap.

SAPO DURUS.

HARD SOAP.

Syn. WHITE CASTILE SOAP.

Soap made with Olive Oil and Soda.

Solubility.—The greater part is soluble 1 in 20 of Water; entirely 1 in 1½ of boiling Water; 1 in 2 of boiling Rectified Spirit.

Test.—Soluble in Rectified Spirit. Brit. Ph.

The Author found that of 30 grains of White Castile Soap digested for four days in 1 ounce of cold Rectified Spirit, only 24 grains are dissolved; when heated it all dissolved.

Medicinal Properties.—Laxative and antacid. Combined with Rhubarb, it is administered in dyspepsia attended with constipation. Large and frequent doses, wrapped in wafer paper, are most effective in removing gall-stones.

Dose.—5 to 15 grs.

(Austr., Sapo Venetus; Belg. and Dutch, Sapo Medicatus; Dan., Sapo Medicatus and Sapo Albus Oleaceus; Hung., Sapo Venetus; Norw., Sapo Albus Oleaceus; Russ., Sapo Hispanicus Albus; Span., Jabon de Sosa; Swed., Sapo Albus Hispanicus; Swiss, Sapo Oleacous; U.S., Sapo. With Almond Oil—Fr., Savon Médicinal; Hung., Sapo Medicinalis; Port., Sabao Vegetal; Span., Jabon Amigdalino. With Lard and Olive Oil—Ger. and Russ., Sapo Medicatus.)

Used in the preparation of Pilulæ Aloes Barbadensis, Pil. Aloes et Assafœtida, Pil. Aloes Socotrinæ, Pil. Cambogia Comp., Pil. Rhei Comp., and Pil. Scillæ Comp.

Preparations.

LINIMENTUM SAPONIS.

Hard Soap, in fine shavings, 2 oz.; Camphor, 1 oz.; Oil of Rosemary, 3 drms.; Rectified Spirit, 16 oz.; Distilled Water, 4 oz.: mix the water with the spirit, add the other ingredients, digest at a temperature not exceeding 70° F. (21°1 C.), agitating occasionally for seven days, and filter. =(1 in 10 nearly).

There is now less Soap, Camphor, and Spirit, and more Water.

The temperature 70° F. was introduced in Brit. Ph. 1864, because it was found that when this temperature was exceeded, the liniment was always more or less gelatinous in cold weather, and could not be rendered bright again by warmth.

Contained in Linimentum Opii.

Linimentum Saponis.

U.S., Soap, 10; Camphor, 5; Oil of Rosemary, 1; Alcohol (94°), 70; Water, to make 100.

Linimentum Saponis Camphoratum.

Swed., Sap. Alb. Hisp., 10; Camphor, 5; Alcohol (64°), 100; Ol. Rosmar., 1.

Liniment Savonneux.

Fr., Tincture of Soap (1 to 5), 10; Alcohol (80°), 9; Expressed Oil of Almonds, 1.

Liniment Savonneux Camphré.

Fr., Tincture of Soap (1 to 5), 10; Tincture of Camphor (1 to 9), 9; Expressed Oil of Almonds, 1.

Linimentum Saponato-Camphoratum.

Austr., Sap. veneti, 8; Sap. communis, 16; Alcohol (70°), 100; Ol. Lavand., 1; Ol. Rosmarini, 1; Liq. Ammoniæ, 4; Camphor, 2; Alcohol (90°), *q.s.*

Ger., Sap. Medic., 60; Camphor, 20; Alcohol (90°), 810; Glycerin, 50; Ol. Thymi, 4; Ol. Rosmar., 6; Liq. Ammoniæ, 50.

Hung., Sap. Alb., 24; Alcohol (70°), 100; Camphor, 2; Ol. Lavand., 1; Ol. Rosmarini, 1; Liq. Ammoniæ, 4.

Russ., Sap. Butyr., 48; Camphor, 24; Alcohol (90°), 288; Ol. Citri, 2; Ol. Rosmar., 2; Ol. Thymi, 1; Liq. Ammoniæ, 24.

Linimentum Saponato-Camphoratum Liquidum.

Ger., Spirit Saponis, 350; Spirit Camphor, 120; Liquor Ammoniæ, 24; Ol. Rosmarini, 4; Ol. Thyme, 2.

Russ., Saponis Hispanici, 36; Camphor, 5; Rectified Spirit (70°), 224; Liquor Ammoniæ, 8; Ol. Rosmarini, 2; Ol. Thyme, 1.

Linimentum Opodeldoc.

Dan., Sap. Butyr., 24; Alcohol (90°), 192; Camphor, 4; Sol. Ammon., 12; Ol. Rosmar., 2; Ol. Thymi, 3.

Norw., Sap. Butyr., 8; Camphor, 2; Alcohol (90°), 84; Sol. Ammon., 4; Ol. Rosmar., 1; Ol. Thymi, 1.

Swed., Sap Butyr., 30; Camphor, 10; Alcohol (90°), 250; Ol. Thymi, 2; Ol. Rosmar., 3; Sol. Ammon., 15.

Balsamum Opodeldoc Liquidum.

Belg., Spirit Saponis, 725; Spirit Camphor, 225; Liquor Ammoniæ, 30; Ol. Rosmarini, 15; Ol. Thyme, 5.

Balsamum Opodeldoc Solidum.

Belg., Sap. Animal., 20; Camphor, 16; Liquid Ammonia, 5; Alcohol (92°), 155; Ol. Rosmar., 3; Ol. Thymi, 1.

Balsamo Opodeldoc Liquido.

Span., Soda Soap, 50; Camphor, 25; Alcohol (85°), 500; Ol. Rosmar., 8; Ol. Thymi, 4; Liq. Ammon., 20.

Balsamo Opodeldoc Solido.

Span., Animal Soap, 30; Camphor, 24; Alcohol (90°), 250; Ol. Rosmar., 6; Ol. Thymi, 2; Liq. Ammon., 10.

Baume Opodeldoc.

Fr., Sap. Animal., 15; Camphor, 12; Alcohol (90°), 125; Liq. Ammon., 5; Ol. Rosmar., 3; Ol. Thymi, 1.

Baume Opodeldoc Liquido.

Fr., Sap. Dur., 10; Camphor, 9; Alcohol (80°), 100; Ol. Rosmar., 2; Ol. Thymi, 1; Liq. Ammon., 3.

Opodeldoc.

Port., Sap. Animal., 16; Camphor, 16; Alcohol (85°), 158; Ol. Lavand., 1; Ol. Rosmar., 1; Liq. Ammon., 8.

Swiss, Sap. Sebac, 20; Camphor, 5; Alcohol (90°), 210; Ol. Rosmar., 2; Ol. Thymi, 1; Liq. Ammon., 12.

Opodeldoc Liquidum.

Swiss, Spirit of Soap (1 to 4), 170; Spirit of Camphor (1 to 9), 60; Ol. Rosmar., 2; Ol. Thymi, 1; Liq. Ammon., 17.

Sapo Aromaticus.

Dutch, Sap. Med., 14; Alcohol (70°), 80; Camphor, 2; Oil of Rosemary, 1; Liq. Ammon., 3.

Spiritus Saponis Camphoratus.

Dan., Sap. Alb., 20; Camphor, 3; Alcohol (70°), 100; Ol. Rosmar., 1; Ol. Thymi, 1.

Norw., Sap. Alb., 16; Camphor, 3; Alcohol (64°), 80; Ol. Origani, 1; Ol. Rosmar., 1.

PILULA SAPONIS COMPOSITA. *See* OPIUM.

1 gr. Opium powder, in 6 nearly.

Not Official.

GLYCERINE SOAP.—There are several makers in this country and on the continent. The soaps are transparent and pleasant to use.

JUNIPER TAR SOAP, BRECKNELL'S PURE YELLOW SOAP, OXIDE OF ZINC SOAP, CARBOLIC ACID SOAP, are occasionally prescribed for skin diseases.

SAPO MOLLIS.

SOFT SOAP.

Soap made with Olive Oil and Potash, containing all the Glycerine existing in the Oil.

A transparent soft solid of a greenish-yellow colour.

Professor Redwood recommends that Soft Soap should be made with Olive Oil, and be free from Caustic and Carbonated Alkali.—*P.J.* xvii. 741, 753.

Solubility.—1 in 4 of Water; 1 in 1 of boiling Water; almost entirely 1 in 1 of Rectified Spirit.

Tests.—Soluble in Rectified Spirit; not imparting an oily stain to paper.

The ash obtained by incineration is very deliquescent.

(Austr., Dutch, Ger., and Swiss, Sapo Kalinus; Belg., Russ., Swed., and

U.S., Sapo Viridis; Hung., Sapo Kalinus Albus and Sapo Kalinus Venalis; not in the others.)

Contained in Linimentum Terebinthinæ.

Not Official.

MOLLIN.—A Soft Soap containing 17 p. c. of uncombined fat and 30 p. c. of Glycerine.

It has been recommended as a basis for ointments.

SARSÆ RADIX.

JAMAICA SARSAPARILLA.

The dried root of *Smilax officinalis,* native of Central America. Introduced into Europe about 1630.

(In all the Pharmacopœias; Fr., Salsepareille; Port., Salsaparrilha; Span., Zarzaparrilla.)

Medicinal Properties.—Alterative and tonic. Opinions differ as to its efficacy in secondary syphilis. It is given alone or in combination with other remedies.

Incompatibles.—Alkalies which accelerate its decomposition.

Preparations.

DECOCTUM SARSÆ.

Jamaica Sarsaparilla, cut transversely, 1; boiling Distilled Water, 12: digest for an hour, boil ten minutes in a covered vessel, cool, strain, and add water to make 8. =(1 in 8).

Dose.—$\frac{1}{2}$ to 1 pint daily, in divided doses.

(Belg., 1 in 10; Fr. (Tisane de Salsepareille), 1 in 20; Span. (Cocimiento de Zarzaparrilla), 1 in 23, contains Liquorice; not in the others.)

DECOCTUM SARSÆ COMPOSITUM.

Jamaica Sarsaparilla, cut transversely, $2\frac{1}{2}$ oz.; Sassafras Root, in chips, $\frac{1}{4}$ oz.; Guaiacum Wood turnings, $\frac{1}{4}$ oz.; dried Liquorice Root, bruised, $\frac{1}{4}$ oz.; Mezereon Bark, $\frac{1}{8}$ oz.; boiling Distilled Water, 30 oz.: digest for one hour, boil ten minutes in a covered vessel, cool and strain. Add Water to make the product measure 20 oz. =(1 in 8).

Now made with dried Liquorice Root instead of fresh.

Dose.—$\frac{1}{2}$ to 1 pint daily, in divided doses.

(Port., 1 in 20; U.S., 1 in 10; both similar to Brit.; Austr., Ger., and Swiss, Decoctum Sarsaparillæ Compositum Fortius and Mitius; Belg., Hung., and Swed., Decoctum Zittmanni Fortius and Mitius; Span., Cocimiento Edulcorante de Zarzaparrilla; all differ widely from Brit.; not in the others.)

EXTRACTUM SARSÆ LIQUIDUM.

Jamaica Sarsaparilla, in No. 40 Powder, 40; Proof Spirit, 40; Sugar, 5; Distilled Water (temp. 160° F.), 240: macerate the Sarsaparilla with the Spirit in a closed vessel for 10 days; then press out 20 of liquor, and set this aside; digest the pressed residue in the Water at 160° F. (71·1° C.) for sixteen hours, then strain and press out the liquid, dissolve the Sugar in this, and evaporate by a water bath to about 18, mix the spirituous and aqueous liquids, and make up the volume to 40 by the addition of Distilled Water. =(1 root in 1).

Sarsaparilla is now ordered in No. 40 powder and digested in Spirit previous to the extraction with water, but a fluid extract of still finer flavour is obtained by repercolation with a mixture of equal parts Proof Spirit and Water. It is also less liable to fermentation.

Note.—B. P. states that improved exhaustion of the root requires this increased proportion of product as compared with that of B. P. 1867.

A quantity of each preparation was evaporated to dryness and then dried at 105° C. B. P. 1867 yielded 22·4 per cent. and B. P. 1885 yielded 12·3 per cent. after deducting the added sugar. Both preparations were made from the same bundle of Sarsaparilla, and frothed to about the same extent when shaken up with water.

Dose.—1 to 4 drms.

(U.S., with Glycerine, 1 in 1; not in the other Pharmacopœias; Belg., Fr., Port., Span., and Swiss have a solid extract.)

Not Official.

EXTRACTUM SARSÆ LIQUIDUM COMPOSITUM.—Jamaica Sarsaparilla, cut transversely, 16 oz.; Sassafras, sliced, 2 oz.; Guaiacum Wood, rasped, 2 oz. Liquorice Root, bruised, 2 oz.; Mezereon, cut, 1 oz.; Rectified Spirit, 1 oz.; Distilled Water, 6 pints: macerate the first five ingredients in one half of the water, at a temperature not exceeding 160° F., for six hours, and decant the liquor; digest the residue in the remainder of the water for the same time, and express; filter the mixed liquors, and evaporate by a water bath to 7 fluid ounces; when cold add the Spirit.

= (2 in 1).

Dose.—1 to 4 drms.

(U.S. (ingredients similar, but half strength) with Glycerine; not in the other Pharmacopœias.)

SASSAFRAS RADIX.

SASSAFRAS ROOT.

The dried root of *Sassafras officinale*, reduced to chips or shavings.

(Austr., Belg., Dan., Dutch, Fr., Ger., Norw., Port., Russ., Span., Swed. and Swiss, the Root; U.S., the Root-bark and the pith of the stems; not in Hung.)

Medicinal Properties.—Stimulant and diaphoretic. Used as an adjuvant to other medicines.

The bark of the root contains a volatile oil.

Contained in Decoctum Sarsæ Compositum.

SCAMMONIÆ RADIX.

SCAMMONY ROOT.

The dried root of *Convolvulus scammonia.*

From Syria and Asia Minor.

(Belg. and Russ.; not in the other Pharmacopœias.)

SCAMMONIÆ RESINA.

RESIN OF SCAMMONY.

16 oz. Scammony Root produce $1\frac{1}{8}$ oz. Resin.

It is soluble in almost all proportions of Rectified Spirit and Ether also soluble in Solution of Potash.

(Belg., Fr., Russ., Swed., Swiss and U.S.; not in the others.)

Medicinal Properties.—An energetic cathartic. May be used when brisk action is needed, but on account of its griping properties it is rarely used alone. In combination it promotes the action of other medicines, whilst its own harshness is mitigated. A good vermifuge for thread-worms.

Is a powerful intestinal, but a feeble hepatic irritant.—Dr. Rutherford.

Dose.—3 to 8 grs. in powder, or in emulsion with 3 or 4 oz. of milk.

Contained in Extractum Colocynthidis Compositum and Pilula Colocynthidis Composita.

Preparations.

CONFECTIO SCAMMONII.

Resin of Scammony, in fine powder, 3 oz.; Ginger, in fine powder, 1½ oz.; Oil of Caraway, 1 drm.; Oil of Cloves, ½ drm.; Syrup, 3 oz.; Clarified Honey, 1½ oz.: rub the powders with the Syrup and the Honey into a uniform mass, then add the Oils, and mix. =(1 in 3).

Now made with Resin of Scammony in place of Scammony.

Dose.—10 to 30 grs.

(Not in the other Pharmacopœias.)

PILULA SCAMMONII COMPOSITA.

Resin of Scammony, 1; Resin of Jalap, 1; Curd Soap in powder, 1; Strong Tincture of Ginger, 1; Rectified Spirit, 2: dissolve with a gentle heat, and evaporate to a pill consistence. Product, 3¼.

Dose.—5 to 15 grs.

(Belg., Pilulæ Hænii, Scammony 1, Resin of Jalap 1, Soap 1, Pill of Aloes with Hellebore 2; not in the other Pharmacopœias.)

PULVIS SCAMMONII COMPOSITUS.

Resin of Scammony, 4; Jalap, 3; Ginger, 1; all in fine powder: mix. =(1 in 2).

Now made with Resin of Scammony in place of Scammony.

Dose.—10 to 20 grs.

(Port. (Po de Escamonea Composto), Scammony 5, Jalap 4, Ginger 1; not in the other Pharmacopœias.)

SCAMMONIUM.

SCAMMONY.

A Gum Resin obtained by incision from the living root of *Convolvulus scammonia*, chiefly from Smyrna, in Asia Minor; the juice, collected in shells, is allowed to concrete. The purest is known in commerce as Virgin Scammony.

Solubility.—Almost entirely dissolved in boiling diluted Rectified Spirit.

Tests.—It does not effervesce with Hydrochloric Acid. Boiling Water, agitated with the powder, cooled and filtered, does not strike a blue colour with Tincture of Iodine—indicating absence of Starch. Ether removes about 75 per cent. of Resin; and what remains is chiefly soluble Gum with a little moisture.

Note.—Has been adulterated with Resin prepared from the root, which can be detected by odour and colour on comparison with a genuine specimen.—*P.J.* xiv. 397.

(Dan., Fr., Norw., Port. and Span., Escamonea, Swed., Swiss and U.S.; not in the others.)

Medicinal Properties.—Similar to those of Resin of Scammony, but Scammony emulsifies with Water, the Resin does not.

Dose.—5 to 10 grs. of pure Scammony or of the Resin.

Preparation.

MISTURA SCAMMONII.

Scammony, in powder, 6 grs.; Fresh Milk, 2 oz.: triturate, and form an emulsion. =(1 in 146).

Now made with Virgin Scammony, as suggested in Companion, instead of Resin of Scammony.

Dose.—The full quantity of the formula for an adult, half for a child.

(Not in the other Pharmacopœias.)

SCILLA.

SQUILL.

The bulb of *Urginea scilla,* divested of its dry membranous outer scales, sliced and dried. From the Mediterranean coasts.

(In all the Pharmacopœias. Fr., Scille; Port., Scilla; Span., Escila.)

Medicinal Properties.—A stimulant expectorant and diuretic. It increases the secretion of the bronchial mucous membrane and aids the expectoration of mucus. The tincture largely diluted with water is the best mode of administering it, a teaspoonful mixed with three tablespoonfuls of water, may be placed at the bedside of a bronchitic patient, and about a teaspoonful taken frequently to relieve the cough.

As an expectorant, it is used with Ipecacuanha and Ammoniacum; as a diuretic in dropsy, given with Mercury or Digitalis.

Dose.—1 to 2 grs. of the powder.

Preparations.

ACETUM SCILLÆ.

Dried Squill, bruised, 2½; Diluted Acetic Acid, 20; macerate the Squill in the Acid for seven days, then strain with expression, and filter. Sp. g. about 1·038. =(1 in 8).

The Spirit is now omitted.

Dose.—15 to 40 minims.

(Austr., Dan., Dutch, Fr., Ger., Hung., Norw., Port., Russ., Swed., Swiss, and U.S., 1 in 10; Belg., about 1 in 12; Span., 1 in 12: all by weight.)

OXYMEL SCILLÆ.

Vinegar of Squill, 5; Clarified Honey, 8: mix, and evaporate till the Sp. g. is 1·32.

It is better to evaporate the Acetum Scillæ to about 2⅔ by weight before adding the Honey.

Dose.—½ to 1 drm.

(Austr., Ger. and Russ., Vinegar of Squill 1, Honey 2; Dan., Norw., Span., and Swed., Vinegar of Squill 1, Honey 3; Dutch, Vinegar of Squill 2, Sugar 1, Honey 1; Fr. and Port., Vinegar of Squill 1, Honey 4; Hung., Extract of Squill 2, Honey 320, Strong Acetic Acid (96 p.c.) 3, Dilute Acetic Acid 4; Swiss, Vinegar of Squill 2, Sugar 2, Honey 3: all by weight. Not in Belg. or U.S.)

PILULA SCILLÆ COMPOSITA.

Squill, in fine powder, 1¼; Ginger, in fine powder, 1; Ammoniacum, in powder, 1; Hard Soap, in powder, 1; Treacle, by weight, 2, or a sufficiency: mix the powders, add the Treacle, and beat into a mass. =(1 in 5).

Dose.—5 to 10 grs.

(Belg., 1 in 7; not in the other Pharmacopœias.)

SYRUPUS SCILLÆ.

Vinegar of Squill, 20; Refined Sugar, 40: dissolve with the aid of a little heat.

Sp. g. about 1·345.

Dose.—½ to 1 drm.

(Belg., Vinegar of Squill 347, Sugar 653; U.S., Vinegar of Squill 20, Sugar 30; Water to make 50; Russ., Squill 1, Water 12, Sugar 18; Swed., Squill 2, Ginger 1, Hyssop 4, Peppermint Water 35, Sugar 63: all by weight. Not in the other Pharmacopœias.)

TINCTURA SCILLÆ.

Dried Squill, bruised, 1; Proof Spirit, 8: macerate for forty-eight hours with 6 of the spirit, agitating occasionally, pack in a percolator, let it drain, and pour on the remaining spirit; when it ceases to drop, press, filter, and make up with Proof Spirit to 8. =(1 in 8).

Dose.—10 to 30 minims with Paregoric or Tincture of Belladonna for cough.

(U.S., 15 in 100; Belg., Fr., Ger., Port., Russ., Span., Swed. and Swiss, 1 and 5: all by weight. Not in the others.)

SCOPARII CACUMINA.

BROOM TOPS.

The fresh and dried tops of *Cytisus scoparius*, from indigenous plants.

(Port., Giesta; U.S., Scoparius; not in the other Pharmacopœias.)

Medicinal Properties.—Diuretic and cathartic. Employed in dropsical complaints.

Preparations.

DECOCTUM SCOPARII.

Broom Tops, dried, 1; Distilled Water, 20: boil ten minutes, and strain. The product should measure 20. =(1 in 20).

Dose.—2 to 4 oz.

(Not in the other Pharmacopœias.)

SUCCUS SCOPARII.

Bruise fresh Broom Tops in a stone mortar, express the juice, and to every 3 measures of juice add 1 of Rectified Spirit; set aside seven days, and filter. Keep it in a cool place.

Dose.—1 to 2 drms.

Not Official.

SPARTEINA.—A liquid alkaloid, heavier than Water, obtained from Broom. Insoluble in Water, soluble in Alcohol, Ether, and Chloroform.

SPARTEINÆ SULPHAS.—Colourless crystals, readily soluble in Water.

Medicinal Properties.—Cardiac tonic and diuretic. Useful in mitral disease. It slows and strengthens the pulse. Its action is more rapid and less persistent than that of Digitalis.—*B.M.J.* '86, i. 1246; *L.* '87, ii. 203; *B.M.J.* '88, i. 263; *P.J.* xvi. 543.

Dose.—1 to 4 grains.

Hypodermic Lamels containing $\frac{1}{2}$ grain of Sulphate of Sparteine.

Not Official.

SCOPOLA.

The dried rhizome of *Scopola carniolica*.

The experiments of Dunstan and Chaston show the alkaloid to be Hyoscyamine, of which a sample contained ·43 p. c.

Medicinal Properties.—It would naturally have the same properties as Belladonna and Hyoscyamus. It dilates the pupil, acts as a local anodyne and anhydrotic; it does not produce dryness of the throat.

Preparations.

EXTRACTUM SCOPOLÆ ALCOHOLICUM.—Scopola rhizoma in No. 20 powder, 16; macerate in 40 of Rectified Spirit 48 hours; transfer to a percolator, and when the fluid ceases to drop continue the percolation with 20 more of Rectified Spirit afterwards subject the contents of the percolator to pressure, filter, mix the liquids, and evaporate to a soft extract.

Estimate the alkaloidal strength of this extract by the following method :—Dissolve 2 grams of the extract in about 10 c.c. of warm distilled water, acidulated with a few drops of diluted hydrochloric acid. Pour the solution into a stoppered glass separator, and add ammonia until the liquid is distinctly alkaline. Agitate for a few minutes with 10 c.c. of chloroform, separate, and again wash the aqueous liquid with 3 c.c. of chloroform. Agitate the mixed chloroform solutions with 10 c.c. of diluted hydrochloric acid, separate, wash with 3 c.c. of the diluted acid, mix the acid solutions, render alkaline with ammonia, and agitate with 10 c.c. of chloroform. After separation wash the alkaline solution with 3 c.c. of chloroform, mix the chloroform solutions, evaporate in a dish of known weight, and dry the residue, which should be nearly colourless, at a temperature of 200° F. (93° C.). The weight of the residue thus obtained, multiplied by fifty, will give the percentage of alkaloid present in the extract. Having thus ascertained the strength, warm the extract over a water-bath in a dish of known weight, and adjust by evaporation or by the addition of distilled water and sugar of milk in such proportion that the finished extract shall be of firm consistence and shall contain two per cent. of alkaloid.

EXTRACTUM SCOPOLÆ LIQUIDUM.—Scopola rhizoma in No. 20 powder, 16; Rectified Spirit and Distilled Water, of each a sufficiency.

Mix 24 of the spirit with 6 of the water. Macerate the Scopola in this mixture for forty-eight hours, agitating occasionally. Transfer to a percolator, and when the fluid ceases to pass, subject the marc to pressure, and filter the product. Mix the liquids and measure the exact volume of the mixture (a), after removing 25 c.c. for analysis. Evaporate the 25 c.c. over a water-bath to the consistence of a soft extract. Estimate the alkaloid present in this extract by the process given in the formula for the alcoholic extract. The weight of the residue thus obtained, multiplied by four, will give the parts by weight of the alkaloid in 100 fluid parts of the liquid (a). Adjust the total volume of this liquid, either by evaporation over a water-bath, or by the addition of a mixture of four fluid parts of Rectified Spirit and one fluid part of distilled water, so that 100 c.c. of the liquid extract shall contain ·25 gramme of alkaloid.

EMPLASTRUM SCOPOLÆ.—Alcoholic Extract of Scopola, 1; Resin Plaster, 2; Soap Plaster, 2.

Contains ·4 per cent. of alkaloid.

LINIMENTUM SCOPOLÆ.—Liquid Extract of Scopela, 24; Camphor, 1; dissolve and make up to 30 with a mixture of Rectified Spirit 4, Water 1.

Contains 1 grain of alkaloid in 500 fluid grains.

TINCTURA SCOPOLÆ.—Liquid Extract of Scopola, 4; Proof Spirit, 21; mix.

100 fluid grains contain $\frac{1}{25}$ grain of alkaloid.

UNGUENTUM SCOPOLÆ.—Alcoholic Extract of Scopola, 1; Benzoated Lard, 9; mix thoroughly.

Contains ·2 per cent. of alkaloid.

SENEGÆ RADIX.

SENEGA ROOT.

The dried root of *Polygala Senega*, from North America.

(In all the Pharmacopœias. Fr., Polygala de Virginie; Span., Poligala.)

Medicinal Properties.—A stimulating expectorant, diaphoretic and diuretic. It also possesses emmenagogue properties. Chiefly used in chronic bronchitis, combined with Carbonate of Ammonium and Spirit of Chloroform.

Dose.—In powder, 15 to 20 grs.

Preparations.

INFUSUM SENEGÆ.

Senega Root, in No. 20 powder, 1; boiling Distilled Water, 20: infuse half an hour, and strain. =(1 in 20).

Dose.—1 to 2 oz.

(Fr., Tisane de Polygala, 1 in 100; not in the other Pharmacopœias.)

TINCTURA SENEGÆ.

Senega Root, in No. 40 powder, 1; Proof Spirit, 8: macerate forty-eight hours with 6 of the spirit, agitating occasionally, pack in a percolator and let it drain; pour on the remaining spirit; when the fluid ceases to drop, press, filter, and make up with Proof Spirit to 8. =(1 in 8).

Dose.—½ to 2 drms.

(Fr. and Russ. 1 and 5, by weight; not in the other Pharmacopœias.)

Not Official.

SYRUPUS SENEGÆ.

Austr. and Ger.—Senega 5, Alcohol (90°) 5, Water 45; digest two days, strain, express, and filter 40, to which add Sugar 60.

U.S.—Fluid Extract Senega, 160; Water of Ammonia, 4; Sugar, 600; Water to make 1000.

Dan., Norw., and Swiss, 1 in 25; Hung., 1 in 27; Span., 1 in 33; Swed., 1 in 28; all by weight.

SENNA.

SENNA.

The dried leaflets of various species of *Cassia.* The British Pharmacopœia recognises two kinds: the Alexandrian Senna (*Senna Alexandrina*), imported from Alexandria, being the leaflets of *C. acutifolia* carefully freed from the flowers, pods, and leaf-stalks; and the Tinnivelly Senna (*Senna Indica*), the leaflets of *C. angustifolia* from plants cultivated in Southern India. The Alexandrian Senna should be free from admixture of leaves, flowers, and fruit of the Argel (*Solenostemma Argel*). The unequally oblique base, and freedom from bitterness, distinguish the Senna from Argel leaves; the latter are also thicker, greyer, and more wrinkled.

(In all the Pharmacopœias; Fr., Séné; Port., Senne; Span., Sen.)

Medicinal Properties.—A general and efficient purgative in cases of occasional or habitual constipation. Given in large doses, it occasions griping and nausea; it is therefore best administered with aromatics.

The different kinds of Senna, freed from stalks, are of nearly equal medicinal value.

Is an hepatic stimulant of feeble power.—Dr. Rutherford.

Dose.—Of powder, 10 to 30 grs.

Used in the preparation of Pulvis Glycyrrhizæ Compositus.

Preparations.

CONFECTIO SENNÆ. *Syn.* Electuarium Lenitivum.

Senna, in fine powder, 7; Coriander, in fine powder, 3; Figs, 12; Tamarind, 9; Cassia Pulp, 9; Prunes, 6; Extract of Liquorice, 1; Refined Sugar, 30; Distilled Water, 24. Boil the Figs and Prunes gently in the water four hours, and add water to make up 24; then add the Tamarind and Cassia; macerate for two hours, and rub the pulp through a hair sieve; dissolve the Sugar and Liquorice in the pulped product with a gentle heat; and while still warm mix in the

Senna and Coriander. The product should be made to weigh 75, either by evaporation, or the addition of more water. =(1 in 11 nearly).

Dose.—60 to 120 grs.

(In all the Pharmacopœias, but differing in composition.)

INFUSUM SENNÆ.

Senna, 1 oz.; Ginger, sliced, 28 grs.; boiling Distilled Water, 10 oz.: infuse half an hour, and strain. =(1 in 10).

Ginger reduced from 30 to 28 grs., and time reduced from one hour to half an hour.

As this Infusion quickly spoils by keeping in warm weather, the addition of 1 gr. of Nitre to each ounce will be found to impart great conservative power. From 20 oz. of Infusion only 14 oz. drain out.

Dose.—1 to 2 oz.

(Austr., Inf. Sennæ c. Manna, about 1 in 8; Belg., 1 in 10; Dan., Norw., Port., Swed., and Swiss, Compound, 1 in 10; Norw., has also Simple Infusion, 1 in 10; Dutch, 1 in 25; also Compound with Anise Fruit, Rochelle Salt and Liquorice; Hung., Infusum Laxativum, 1 in 10, with Manna; Ger. and Russ., Composita, 1 in 8, with Manna and Rochelle Salt; not in the others.)

MISTURA SENNÆ COMPOSITA. *Syn.* BLACK DRAUGHT.

Infusion of Senna, 15; Sulphate of Magnesium, 4; Liquid Extract of Liquorice, 1; Tincture of Senna, 2½; Compound Tincture of Cardamoms, 1½: dissolve the Sulphate of Magnesium in the Infusion with the aid of a gentle heat, then add the Liquid Extract and the Tinctures. =(1 Sulphate of Magnesium in 5½).

Liquid Extract used in place of Extract of Liquorice and Tincture of Cardamoms increased.

Dose.—1 to 1½ oz.

(U.S. Infusum Sennæ Comp.—Senna 6, Manna 12, Sulphate of Magnesium 12, Fennel 2, Boiling Water 100, Water sufficient to weigh 100 when cold.)

SYRUPUS SENNÆ.

Senna, broken small, 16 oz.; Oil of Coriander, 3 minims; Refined Sugar, 24 oz.; Distilled Water, 100 oz., or a sufficiency; Rectified Spirit, 3 oz.: digest the Senna in 70 oz. of the water twenty-four hours at a temperature of 120° F., press, and strain; digest the marc in 30 oz. of the water six hours, press, and strain; evaporate the mixed liquors to 10 oz.; when cold, add the Rectified Spirit, containing the Oil of Coriander. Filter, and wash the filter with water to make 16 oz.; add the Sugar, and dissolve with heat. Should weigh 42 oz., and measure 32 oz. Sp. g. 1·310. =(1 in 2).

Quantity of Spirit increased.

Dose.—1 to 2 drms. Brit. Ph. dose, 1 to 4 drms.; for children, ½ to 1 drm.

(Austr., with Aniseed and Manna; Belg., with and without Manna; Dan., Norw., Russ., Swed., and Swiss, with Fennel and Manna; Dutch, with simple Syrup; Ger., with Fennel; Hung., Syrupus Mannatus, with Aniseed and Manna; U.S. similar to B. P.; not in Fr.)

TINCTURA SENNÆ.

Senna, broken small, 5; Raisins, freed from seeds, 4; Caraway Fruit, bruised, 1; Coriander Fruit, bruised, 1; Proof Spirit, 40: macerate the ingredients forty-eight hours in three-fourths of the spirit, agitating occasionally; pack in a percolator, and when it ceases to drop, pour on the remaining spirit; press, filter, and make up with Proof Spirit to 40. =(1 in 8).

Dose.—1 to 4 drms.

(Belg., Fr., and Swiss, 1 and 5, by weight; not in the other Pharmacopœias.)

Not Official.

EXTRACTUM SENNÆ FRUCTUUM FLUIDUM.—Exhaust Senna pods with cold Water and evaporate the resulting liquid *in vacuo*, so that one of Fluid Extract shall equal 1 of Senna pods.

Senna Pods have been recently revived as an agreeable aperient.—*L.* '89, ii. 164.

ACIDUM CATHARTICUM.—According to Stockman, Cathartic Acid is a coloured glucoside. In the free state it is easily decomposed. It acts locally as an irritant and hence as a purgative when introduced into the alimentary canal.—*P.J.* xv. 751.

Bourgoin and Bouchut, in a lengthy investigation on Senna and Cathartic Acid, conclude, "As a general result of this enquiry it appears that the best preparation is the Infusion of Senna."—*P.J.* ii. 223.

SERPENTARIÆ RHIZOMA.

SERPENTARY RHIZOME.

The dried rhizome and rootlets of *Aristolochia serpentaria*, or of *Aristolochia reticulata*.

From the southern parts of North America.

(Belg., Dan., Fr., Norw., Port., Russ., Span., Swed., and U.S.; not in the others.)

Medicinal Properties.—Stimulant, tonic, and diaphoretic. A valuable remedy in the low stages of fever, combined with Carbonate of Ammonium. Used in dyspepsia and in chronic rheumatism and gout.

Dose.—Of the powder, 10 to 15 grs.

Used in the preparation of Tinctura Cinchonæ Composita.

Preparations.

INFUSUM SERPENTARIÆ.

Serpentary Rhizome, in No. 20 Powder, 1; boiling Distilled Water, 40; infuse half an hour and strain. =(1 in 40).

Time reduced from two hours to half-an hour.

Dose.—1 to 2 oz.

(Not in the other Pharmacopœias.)

TINCTURA SERPENTARIÆ.

Serpentary Rhizome, in No. 40 Powder, 1; Proof Spirit, 8: macerate forty-eight hours with 6 of the spirit, agitating occasionally, pack in a percolator, and let it drain; pour on the remaining spirit, and when it ceases to drop, press, filter, and make up with Proof Spirit to 8. =(1 in 8).

Dose.—½ to 2 drms.

(U.S., 1 in 10, by weight; not in the other Pharmacopœias.)

SEVUM PRÆPARATUM.

PREPARED SUET.

The internal fat of the abdomen of the sheep, *Ovis aries*, purified by melting and straining.

Fusible at 103° F. (39·4° C).—*Brit. Pharm.*

NOTE.—We found that two pieces of mutton suet taken from different animals, when tried by the method given in the B. P. for taking melting points, fused at 119° F. and 120·5° F.

Dissolves in boiling Alcohol; a portion of it separates on cooling.

(Belg., Norw. and Swiss, Sebum; Dan., Sevum ovillum; Fr., Suif de Mouton; Ger. and Hung., Sebum ovile; Port. and Span., Sebo; U.S., Sevum; Russ., Sebum Bovinum Depuratum; not in Austr. or Dutch.)

Contained in Emplastrum Cantharidis, and Unguentum Hydrargyri.

Not Official.

SIMABA CEDRON.

The bruised seeds used for snake-bites and hydrophobia.—*L.M.R.* '85, 144; *P.J.* xv. 638; *T.G.* '88, 785.

A bitter principle, **Cedrine**, has been isolated.

Not Official.

SIMARUBA.

BITTER SIMARUBA, OR MOUNTAIN DAMSON.

The root bark of *Simaruba officinalis*, from the West Indies.

(Dutch, Fr., Port., and Span.; not in the others.)

Medicinal Properties.—A bitter tonic. In large doses causes nausea; is diaphoretic and diuretic. Principally used in the asthenic and chronic form of dysentery; may be combined with Opium in epidemic dysentery, and in the advanced stages of diarrhœa.

Dose.—15 to 30 grs.

Preparation.

INFUSUM SIMARUBÆ.—Simaruba, bruised, 3 drms.; boiling Water, 1 pint: infuse two hours, and strain. =(1 in 53).

Dose.—1 to 2 oz.

This infusion does not colour the preparations of Iron.

(Fr., Tisane, 1 in 200; not in the other Pharmacopœias.)

SINAPIS.

MUSTARD.

The dried ripe seeds of *Brassica nigra* and *B. alba* reduced to powder, mixed.

Test.—A decoction cooled is not made blue by Tincture of Iodine—indicating absence of Starch.

(In all the Pharmacopœias. Fr., Moutarde; Port., Mostarde; Span., Mostaza.)

Medicinal Properties.—A powerful stimulant. The powder is taken internally as a condiment; a tablespoonful in half a pint of water as an emetic; used externally as a rubefacient.

Preparations.

CATAPLASMA SINAPIS.

Mustard, in powder, 2½; Linseed Meal, 2½; boiling Water and Water, a sufficiency: mix the Linseed Meal with 6 to 8 oz. of boiling Water, and add the Mustard, previously mixed with 2 to 3 oz. of lukewarm Water, and stir them together.

The manipulation is modified.

Used as a counter-irritant in inflammation, as in bronchitis and pneumonia, also for neuralgic pains.

(Dan., Unguentum Sinapinum; Fr., Sinaspisme, with Mustard only; Span. and Swed.; not in tho other Pharmacopœias.)

CHARTA SINAPIS.

Mustard, in powder	1 oz.
Solution of Gutta-percha	2 oz., or a sufficiency.

Mix the mustard with the gutta-percha solution so as to form a semi-fluid mixture, and having poured this into a shallow flat-bottomed vessel, such as a dinner-plate, pass strips of cartridge-paper over its surface so that one side of the paper shall receive a thin coating of the mixture. Then lay the paper on a table with the coated side upwards, and let it remain exposed to the air until the coating has hardened.

Before being applied to the skin, let the mustard paper be immersed for a few seconds in tepid water.

(Belg.; Dutch: Fr., Sinapismes en Feuilles; Ger. and Hung., Charta Sinapisata; Span., Papel Sinapico; U.S.; not in the others.)

LINIMENTUM SINAPIS COMPOSITUM.

Oil of Mustard, 1 drm.; Ethereal Extract of Mezereon, 40 grs.; Camphor, 120 grs.; Castor Oil, 5 drms.; Rectified Spirit, 32 drms.: dissolve. =(1 in 40).

As the essential oil quickly disappears on keeping, it is better to keep the other ingredients ready mixed and to add the Mustard Oil when required.

A stimulating liniment.

(Spiritus Sinapis, Austr., Belg., Ger., Hung., Swed., and Swiss; Span. (Alcohol de Mostaza), Oil 1, Spirit 50; Russ., Oil 1, Spirit 24; U.S., similar to Brit. Ph.; all by weight; not in the others.)

OLEUM SINAPIS.

The Oil distilled with water from the seeds of Black Mustard, *Brassica Nigra,* after the expression of the fixed oil.

Sp. g. 1·015—1·020. Boiling point about 298° F. (147·8° C.).

Messrs. Schimmel give sp. g. 1·025 for the pure essential oil.

Solubility.—1 in 50 of water; readily in Rectified Spirit and Ether.

(Austr. and Hung., Oleum Sinapis Æthereum; Belg., Essentia Sinapis; Dan., Norw., and Swed., Ætheroleum Sinapis; Dutch, Ger., Russ., and Swiss, Oleum Sinapis; Port., Essencia de Moutarda; Span., Esencia de Mostaza; U.S., Oleum Sinapis Volatile; not in Fr.)

Medicinal Properties.—Applied to the skin, it produces almost instant vesication, but when diluted it forms a useful counter-irritant application.

Not Official.

INFUSUM SINAPIS.—Mustard, 2 drms.; boiling Water, 4 oz.: strain. It relieves obstinate hiccough.

CHARTA SINAPIS, U.S.—Percolate Black Mustard, in No. 60 powder, with Benzin until the percolate ceases to produce a permanent greasy stain upon blotting paper. Remove and dry the powder by exposure to air: then mix it with as much Solution of Gutta Percha as will give it a semi-liquid consistence, and let it be spread with a suitable brush on one side of a stiff piece of well-sized paper, and allow it to dry. Each square inch of paper should contain about 6 grs. of Mustard.

SODIUM.

SODIUM.

Na, eq. 23.

Sp. g. 0·97. The metal of the alkali Soda, discovered by Sir

Humphrey Davy in 1807, is a soft, malleable, sectile solid, of a silver-white colour, possessing a high degree of metallic lustre, which quickly tarnishes on exposure to the air. Like Potassium, it has a strong affinity for Oxygen: when thrown on cold water, it instantly fuses to a globule, without combustion, and traverses the surface in all directions; on hot water, however, combustion of the Hydrogen ensues.

It should be preserved in well-stoppered bottles under mineral naphtha.

Test.—23 grs., cautiously dissolved in Water, requires for neutralisation at least 975 grain-measures of the volumetric solution of Oxalic Acid.

Preparation.

LIQUOR SODII ETHYLATIS. *See* SODII ETHYLATIS LIQUOR.

The above is the only direct official preparation of Sodium.

Chloride of Sodium is obtained by dissolving Rock Salt in water, and recrystallizing it; some, however, absolutely pure and perfectly white, is found imbedded in the common brown Rock Salt.

From the Chloride of Sodium the Carbonate of Sodium is now prepared, from the latter of which all the other preparations are made.

The Salts of Sodium, even in much larger doses, produce a less depressing effect upon the heart than Salts of Potassium.

The following are the compounds of Sodium given in the British Pharmacopœia:—

	Dose.
SODA CAUSTICA	
SODA TARTARATA	1 to 4 drms.
SODÆ CHLORINATÆ LIQUOR	10 to 20 minims.
SODÆ LIQUOR. *See* SODA CAUSTICA	$\frac{1}{2}$ to 1 drm.
SODII ARSENIAS	$\frac{1}{16}$ to $\frac{1}{8}$ gr.
SODII BIBORAS. *See* BORAX.	
SODII BICARBONAS	10 to 30 grs.
SODII BROMIDUM	10 to 30 grs.
SODII CARBONAS	5 to 30 grs.
SODII CARBONAS EXSICCATA	3 to 10 grs.
SODII CHLORIDUM	10 to 60 grs.
SODII CITRO-TARTRAS EFFERVESCENS	1 to 2 drms.
SODII ETHYLATIS LIQUOR.	
SODII HYPOPHOSPHIS	5 to 10 grs.
SODII IODIDUM	3 to 10 grs.
SODII NITRAS.	
SODII PHOSPHAS	$\frac{1}{4}$ to 1 oz.
SODII SALICYLAS	10 to 30 grs.
SODII SULPHAS	$\frac{1}{4}$ to 1 oz.
SODII SULPHIS	5 to 20 grs.
SODII SULPHOCARBOLAS	10 to 15 grs.
SODII VALERIANAS	1 to 5 grs.

Preparations of the above and Compounds of Sodium not official are to be found in the Index.

SODA CAUSTICA.

CAUSTIC SODA.

Hydrate of Sodium, $\mathbf{NaHO}$, eq. 40, with some impurities.

In hard, greyish-white fragments, very alkaline and corrosive.

Procured by boiling down solution of Soda rapidly in a silver or clean iron vessel until there remains a fluid of oily consistence, a drop of which, when removed on a warmed glass rod, solidifies on cooling. Pour the fluid on a clean silver or iron plate, or into moulds, and as soon as it has solidified break it in pieces.

When required pure it is dissolved in Absolute Alcohol, and the solution evaporated.

Solubility.—1 in 1 of Water; about 1 in 5 of Rectified Spirit.

Tests.—Its aqueous solution acidulated with Nitric Acid gives only scanty white precipitates with Nitrate of Silver and Chloride of Barium, limit of Chlorides and Sulphates. 40 grains dissolved in water leave scarcely any sediment, and require for neutralization about 900 grain-measures of the volumetric solution of Oxalic Acid.

(Belg., Soda Caustica Fusa; Fr., Soude Caustique; Port., Hydrato de Soda; Span., Sosa Caustica por la Cal; U.S., Soda; not in the others.)

Medicinal Properties.—Used externally as a caustic in the form of sticks.

Preparation.

LIQUOR SODÆ.

Carbonate of Sodium, 7; Slaked Lime, washed, 3; Distilled Water, 40: dissolve the carbonate in the water, boil in a clean iron vessel, gradually mix in the washed lime, and continue boiling for ten minutes, stirring constantly; allow the insoluble matter to subside and decant into a green glass bottle, with air-tight stopper, and add Distilled Water, if necessary, to make it correspond with the tests of sp. g. and neutralizing power.

This may also be made (as suggested under Liquor Potassæ) by dissolving solid Caustic Soda in Water and diluting to the required gravity.

NOTE.—The washed Lime is obtained from about 13 oz. of Slaked Lime, washed with Distilled Water (to get rid of the Chloride), until a little of the washings, acidified with Nitric Acid, gives no cloudiness with Nitrate of Silver.

Tests.—Sp. g. 1·047. 1 fluid ounce (458 grains by weight) requires for neutralization 470 grain-measures of the volumetric solution of Oxalic Acid. It does not effervesce when added to an excess of diluted Hydrochloric Acid: mixed with an equal volume of Distilled Water it gives no precipitate with Solution of Lime or Oxalate of Ammonium—indicating absence of Carbonic Acid and Lime. When it is heated with an excess of diluted Nitric Acid, and evaporated to dryness, the residue forms with water a clear solution, which is rendered only slightly turbid by Chloride of Barium and by Nitrate of Silver, and not at all by Ammonia—indicating a trace of Sulphates and Chlorides and absence of Magnesia.

100 grs. contain 4·1 grs. Hydrate of Sodium = 18·8 grs. to 1 oz. of Solution.

(Belg., Soda Caustica Soluta (30 p.c.), sp. g. 1·330 to 1·334; Dan. and Swed., Solut. Hydratis Natrici (20 p.c.), sp. g. 1·215—1·219; Fr., Soude Caustique Liquide (29 p.c.), sp. g. 1·332; Ger., Liquor Natri Caustici (15 p.c.), sp. g. 1·159 to 1·163; Hung., Natrium Hydrooxydatum Solutum (32 p.c.), sp. g. 1·35; Port., Hydrato de Soda Liquido (30 p.c.), sp. g. 1·33; Russ., Natrum Causticum Solutum (30 p.c.), sp. g. 1·330; Span., Solucion de Sosa Caustica (30 p.c.), sp. g. 1·334; Swiss, Liquor Natri Hydrici (24 p.c.); U.S., Liquor Sodæ (about 5 p.c.), sp. g. 1·059.)

Antidotes.—Same as Liquor Potassæ, p. 325.

Used in the preparation of Antimonium Sulphuratum.

SODA TARTARATA.

TARTARATED SODA.

Syn. Tartrate of Soda and Potash. Rochelle-Salt. Sal Seignette.

$NaKC_4H_4O_6 . 4H_2O$, eq. 282.

In colourless transparent prisms, or halves of prisms of the right-rhombic order, generally eight-sided.

Solubility.—1 in 1½ of Water; soluble in its own water of crystallization when hot; insoluble in Rectified Spirit.

Test.—Entirely soluble in cold water. 141 grains, heated to redness till gases cease to be evolved, leave an alkaline residue (Carbonates), which requires for neutralization 990 grain-measures of the volumetric solution of Oxalic Acid.

(Austr. and Hung., Kalium Natro-tartaricum; Belg., Tartras Sodico-Potassicus; Dan., Norw., and Swed., Tartras Natrico-Kalicus; Dutch, Tartras Kalico-Natricus; Fr., Tartrate de Potasse et de Soude; Ger. and Swiss, Tartarus Natronatus; Port., Tartrato de Potassa e de Soda; Russ., Natro-Kali Tartaricum (Sal Polychrestum Seignetti); Span., Tartrato Sodico-Potasico; U.S., Potassii et Sodii Tartras.)

Medicinal Properties.—A mild, cooling purgative, well suited to delicate and irritable stomachs. It is not aperient in small doses, its action being to render the urine alkaline.

A feeble hepatic, but a powerful intestinal stimulant.—Dr. Rutherford.

Dose.—1 to 4 drms.

Not Official.

SEIDLITZ POWDER.—Rochelle Salt, in powder, 2 drms., mixed with Bicarbonate of Sodium, 40 grs.: generally enclosed in blue paper.
In a white paper, 37 grains of Tartaric Acid.

SODÆ CHLORINATÆ LIQUOR.

SOLUTION OF CHLORINATED SODA.

Chlorinated Lime, 16; Carbonate of Sodium, 24; Distilled Water, 160; dissolve the Carbonate of Sodium in 40 of the water, thoroughly triturate the Chlorinated Lime with 120 of the water, and filter; well mix the solutions and filter. Keep the solution in a stoppered bottle in a cool and dark place.

A colourless alkaline liquid containing about 2½ per cent. of available Chlorine.

The strength is the same but the process very much altered and improved.

Tests.—Sp. g. 1·054. 70 grains by weight added to a solution of 20 grains of Iodide of Potassium in 4 ounces of water, and acidulated with 2 drachms of Hydrochloric Acid, requires for the discharge of the brown colour which the mixture assumes, 500 grain-measures of the volumetric solution of Hyposulphite of Sodium. It yields only a slight precipitate with Oxalate of Ammonium—indicating only a trace of Lime.

Test explained under Calx Chlorinata, p. 115.

(Belg. (Hypochloris Sodii Liquidus) Hypochlorite of Calcium 22, Carbonate of Sodium 44, Water 1000; Fr. (Chlorure de Soude liquide), Chlorinated Lime 1, Carbonate of Sodium 2, Water 45; Port. (Soluto de Soda Chlorada), Hypochlorite of Calcium 1, Carbonate of Sodium 2, Water 40; Russ.

(Natrum Hypochlorosum Solutum), Hypochlorite of Calcium 25, Carbonate of Sodium 30, Water to 500; Span. (Solucion de Hipochlorito Sodico), Hypochlorite of Calcium 1, Carbonate of Sodium 2, Water 43; Swed. (Liquor Acidi Hypochlorosi), Carbonate of Sodium 3, Water 10, Chlorine Gas to effervescence; Swiss (Liquor Natri Hypochlorosi), Hypochlorite of Calcium 4, Carbonate of Sodium 5, Water 120; U.S., Chlorinated Lime 80, Carbonate of Sodium 100, Water to make 1000; not in the others.)

Medicinal Properties.—Stimulant, antiseptic, and resolvent. Used internally in scarlatina, etc.; in dysentery, dyspepsia, and in glandular enlargements, and chronic mucous discharges. Locally, in all affections attended with fœtor, especially in scarlet fever and diphtheria, and may be applied, diluted, as a wash, poultice, or by lint; 4 to 6 drms. in 12 oz. of water for a **gargle.** Diluted with Water or Glycerine it forms an excellent application to sore nipples. It is also a powerful disinfecting agent.

Recommended in typhoid fever.—*L.* '85, ii. 520.

Dose.—10 to 20 minims.

Preparation.

CATAPLASMA SODÆ CHLORINATÆ (CHLORINE POULTICE).

Solution of Chlorinated Soda, 1; Linseed Meal, 2; boiling Water, 4: add the Linseed Meal gradually to the water, stirring constantly, then mix in the solution of Chlorinated Soda.

(Not in the other Pharmacopœias.)

Not Official.

SODII ACETAS.

ACETATE OF SODIUM.

$NaC_2H_3O_2 . 3H_2O$, eq. 136.

Solubility.—1 in 1 of Water; 1 in 30 of Rectified Spirit.

Used in the preparation of Acetic Ether.

(Belg., Dan., Dutch, Fr., Ger., Hung., Russ., Span., Swed., Swiss, and U.S.; not in Austr., Norw., or Port.)

SODII ARSENIAS.

ARSENIATE OF SODIUM.

In colourless transparent prisms, which when freshly crystallized have the composition $Na_2HAsO_4, 12H_2O$, eq. 402, (53·7 p.c. aq.). On exposure to air moisture escapes, and the effloresced salt has the formula $Na_2HAsO_4, 7H_2O$, eq. 312, (40·4 p.c. aq.). When dried at 300° F. (148·9° C.) it becomes anhydrous, Na_2HAsO_4, eq. 186.

Although the B.P. does not state definitely which of the two above Hydrates is official, and to which the dose there given refers, it may be inferred from the alternative figure (7·4 or 4·5 grs. per oz.) given as the strength of the Liquor, that the effloresced Hydrate ($7H_2O$) is intended.

Solubility.—1 in 2½ of Water; soluble in its own water of crystallization when hot.

Tests.—Its aqueous solution is alkaline; it precipitates white with Chloride of Barium, Chloride of Calcium, and Sulphate of Zinc, and brick-red with Nitrate of Silver, all soluble in Nitric Acid. 12·4 grains of Anhydrous Arseniate of Sodium dried at 300° F. (148·9° C.), dissolved in Water, and acidulated with Acetic Acid, requires not less than 34 grains of Acetate of Lead for complete precipitation.

Dose.—$\frac{1}{16}$ to $\frac{1}{8}$ grain.

(Belg. dried Salt; Fr., Port., Span., Swiss, and U.S., crystallized; not in the others.)

Medicinal Properties.—Similar to those of the Arsenite of Potassium, or Fowler's Solution. Used in skin affections and nervous diseases. It cures eczema more speedily than Liquor Arsenicalis, producing less gastric disturbance and less irritability of the conjunctiva.

Preparation.

LIQUOR SODII ARSENIATIS.

Arseniate of Sodium rendered anhydrous by a heat not exceeding 300° F. (148·9° C.), 9 grs.; Distilled Water, 2 oz.: dissolve.

=(1 in 100).

Strength increased to about 1 gr. in 100 grain-measures or 1 gr. in 106$\frac{2}{3}$ minims. In Arsenium it is about half the strength of Liquor Arsenicalis.

Dose.—5 to 10 minims, carefully increased.

(U.S., same as Brit.; Belg., 1 in 1000; Fr. and Span., crystallized Arseniate of Sodium 1 in 600; Dan., Port., and Swiss, 1 in 500.)

Pearson's Solution, Crystallized Arseniate of Sodium, 1; Water, 600.

Antidotes.—*See* ACIDUM ARSENIOSUM, page 6.

Not Official.

SODII BENZOAS.

$NaC_7H_5O_2$, H_2O, eq. 162.

A white semi-crystalline or amorphous powder.

Solubility.—1 in 2 of Water; 1 in 35 of Rectified Spirit.

Its aqueous solution gives with Solution of Ferric Sulphate a flesh-coloured precipitate.

(Belg., Benzoas Sodicus; Dutch, Benzoas Natricus; Fr., Benzoate de Soude; Ger., Hung., and Russ., Natrium Benzoicum; Port., Benzoato de Soda; Span., Benzoata de Sosa; U.S., Sodii Benzoas; not in the others.)

Medicinal Properties.—Antiseptic; useful in rheumatism and gout.—*L.* '83, i. 673; *B.M.J.* '86, i. 380, 734.

Dose.—10 to 30 grs.

Is a powerful hepatic stimulant; it is not an intestinal stimulant.—Dr. Rutherford.

SODII BICARBONAS.

BICARBONATE OF SODIUM.

Syn. SODÆ SESQUICARBONAS, P. L., 1836.

$NaHCO_3$, eq. 84.

A white powder, or small opaque irregular scales.

Solubility.—1 in 12 of Water; insoluble in Rectified Spirit.

Tests.—When supersaturated with Nitric Acid, its solution scarcely precipitates with Chloride of Barium or Nitrate of Silver—indicating a mere trace of Sulphate and Chloride. 84 grains, exposed to a red heat, leave 53 grains of alkaline residue (Carbonate), which requires for neutralization 1000 grain-measures of the volumetric solution of Oxalic Acid.

The B.P. also states that "a solution of the salt in cold Water gives a white and not a coloured precipitate with Solution of Perchloride of Mercury," and a somewhat similar test is given in the U.S. This should be omitted, as we have not yet found a commercial sample which would pass the test.

(Austr. and Hung., Natrium Hydrocarbonicum; Belg., Bicarbonas Sodæ; Dan., Dutch, Norw., and Swed., Bicarbonas Natricus; Fr. Bicarbonate de Soude; Ger., Russ., and Swiss, Natrum Bicarbonicum; Port., Bicarbonato de Soda; Span., Carbonato (*bi*) Sodico; not in the others.)

Medicinal Properties.—Analogous to those of the Bicarbonate of Potassium; it is less caustic and irritating than Carbonate of Sodium. Employed as an antacid in dyspepsia. Useful in calculus with excess of Uric Acid, but the corresponding Salts of Potassium and Lithium, however, are preferable, as they form soluble salts with Uric Acid. Moistened with water, is an excellent application to the sting of wasps and gnats.

Has scarcely any appreciable effect as a stimulant of the liver, even when given in large doses.—Dr. Rutherford.

Dose.—10 to 30 grs.

Used in the preparation of Sodii Citro-Tartras Effervescens.

Preparations.

LIQUOR SODÆ EFFERVESCENS. *Syn.* EFFERV. SOLUTION OF SODA.

Bicarbonate of Sodium, 30 grs.; Water, 20 oz.: dissolve and filter, and pass into it as much washed Carbonic Acid Gas (obtained by the action of Sulphuric Acid on Chalk) as can be introduced by the pressure of four atmospheres; bottle, and secure the corks with wire.

Each half-pint bottle contains about 15 grains of Bicarbonate of Sodium.

Test.—Ten fluid ounces, after being boiled for five minutes, require for neutralization 178 grain-measures of the volumetric solution of Oxalic Acid.

TROCHISCI SODII BICARBONATIS.

Lozenges made with Bicarbonate of Sodium, Sugar, Gum Acacia, and Water.

Each lozenge contains 5 grains of Bicarbonate of Sodium.

Dose.—1 to 6 lozenges.

(Austr., Belg., Fr., Dutch, Norw., Port., Span., Swed., Swiss, and U.S.; not in Dan., Ger., Hung., or Russ.)

Not Official.

PULVIS SALINUS ANTICHOLERAICUS (Dr. Stevens).—Bicarbonate of Sodium, 30 grs.; Chloride of Sodium, 20 grs.; Chlorate of Potassium, 7 grs.: for one dose. Given frequently in a small tumbler of cold water during cholera, to arrest the pain and purging.

Bicarbonate of Sodium and Tartaric Acid when well dried do not act on each other, and if well corked will remain good for years. Fifty years ago they were flavoured with Essence of Lemon and sold as Lemon and Kali, they are now sold under various names (without lemon), and are much used in hot climates as a cooling and refreshing medicine.

SODII BROMIDUM.

BROMIDE OF SODIUM.

NaBr, eq. 103.

A granular white powder, somewhat deliquescent.

Solubility.—5 in 6 of Water; 1 in 16 Rectified Spirit.

Tests.—When its aqueous solution is mixed with a little Chlorine Water, and shaken with Chloroform, the latter on falling to the bottom exhibits a red colour. If Bisulphide of Carbon be poured into a solution of the Salt, then Chlorine Water be added drop by drop and the whole agitated, the Bisulphide will acquire a yellow or yellowish-brown colour without a violet tint. The aqueous solution mixed with Mucilage of Starch and a drop of Chlorine Water or Bromine Water should not exhibit a blue colour. 10 grs. of the dry Salt requires for complete decomposition about 960 grain-measures of the volumetric solution of Nitrate of Silver.

(Austr., Ger., Hung., Russ., and Swiss, Natrium Bromatum; Dutch, Brometum Natricum; Fr., Bromure de Sodium; Span., Bromuro Sodico; U.S., Sodii Bromidum; not in the others.)

Medicinal Properties.—Similar to Bromide of Potassium, but less depressant.

Dose.—10 to 30 grs.

It has been recommended as a remedy for sea sickness in 60 grain doses three times a day for at least two days before embarkation on a long voyage, the dose being reduced to half when on board.—*B.M.J.* '81, ii. 730.

SODII CARBONAS.

CARBONATE OF SODIUM.

$Na_2CO_3 . 10H_2O$, eq. 286.

In transparent, colourless, laminar crystals of a rhombic shape, containing 63 per cent. of water of crystallization, which can be driven off by heat; efflorescent; it has a strong alkaline reaction.

Solubility.—5 in 8 of Water at 60° F.; 12 in 1 of Water at 100° F.; 5 in 1 of boiling Water; insoluble in Rectified Spirit.

Tests.—When supersaturated with Nitric Acid it precipitates only slightly with Chloride of Barium or Nitrate of Silver—indicating merely a trace of Sulphate and Chloride. 143 grains require for neutralization at least 960 grain-measures of the volumetric solution of Oxalic Acid.

(In all the Pharmacopœias.)

Medicinal Properties.—Antacid, antilithic, and resolvent. Given principally in diseases attended with acidity of the stomach, as gout and dyspepsia.

Dose.—10 to 30 grs. in any bitter infusion.

Used in the preparation of Liquor Sodæ, Liquor Sodæ Chlorinatæ, Soda Tartarata, Sodii Arsenias, Sodii Bicarbonas, Sodii Carbonas Exsiccata, Sodii Hypophosphis, and Sodii Phosphas.

Preparation.

SODII CARBONAS EXSICCATA. Na_2CO_3, eq. 106.

Expose the Carbonate of Sodium in a porcelain capsule to a heat applied gently until the crystals crumble to powder; then increase the temperature and continue the action until vapours cease to be evolved. Reduce to powder and keep it in a well-closed vessel.

53 grains are equal to 143 grains of crystallized salt.

Dose.—3 to 10 grains three times daily in pill, with soap and aromatics.

(Austr., Belg., Dan., Fr., Ger., Hung., Russ., Swiss, and U.S.; not in the others.)

Not Official.

BALNEUM ALKALINUM.—Crystals of Carbonate of Sodium, 8 or 10 oz. to 60 gallons of Water.

Used in skin diseases as a solvent to remove scabs and scaly incrustations.

SODII CHLORIDUM.

CHLORIDE OF SODIUM. COMMON SALT.

NaCl, eq, 58·5.

In small, white, crystalline grains, or transparent cubic crystals.

Solubility.—Pure Rock Salt, 1 in 2¾ of Water; 1 in 2¾ of boiling Water; 1 in 200 of Rectified Spirit.

Tests.—Should be free from colour and show no sign of deliquescence. The yellow colour imparted to a non-luminous bunsen-flame should be completely cut off by blue glass, no red colour being visible. It should show little or no turbidity with Barium Chloride and on agitating energetically with Ammonia, Ammonium Chloride, and Phosphate of Soda, no precipitate should appear.

(Belg., Dutch, Fr., Ger., Port., Russ., Span., and U.S.; not in the others.)

Medicinal Properties.—Antiseptic; in small doses, stimulant, tonic, and anthelmintic; in larger doses, purgative and emetic. It is also antiperiodic in doses of 8 or 12 drachms during the intervals of ague fits. Locally, as a fomentation to sprains and bruises. A salt water bath (1 pound to 4 gallons), is a tonic and excitant of the system, especially in children. A saturated solution syringed up the nostrils is useful in ozæna. A recent cold is greatly relieved by washing the nostrils and gargling the throat with a weak solution of Salt. In case of a leech being swallowed drink a strong solution of Salt.

Its value as a condiment is well known; animals as well as ourselves require it. Soldiers are supplied with it; our army ·5 (=½ oz.) daily; the French, ·5; Prussian, ·87; Russian, 1·86; for a long time the Russian army had salt-money given, and it was only when scurvy attacked them that the money was stopped and the salt given instead.

The American travellers carry a bag of salt and a knife, and when bitten by snakes, the wound is scraped and salt applied.

Given with Carbonate of Sodium and Chlorate of Potassium by Dr. Stevens in all stages of Cholera, and is also effectual in common Diarrhœa, see p. 381.

A very feeble hepatic stimulant.—Dr. Rutherford.

Dose.—10 to 60 grs. as a tonic: 120 to 240 grs. as a cathartic.

Used in the preparation of Acidum Hydrochloricum, Hydrargyri Perchloridum, Hydrargyri Subchloridum, and Sodii Carbonas.

SODII CITRO-TARTRAS EFFERVESCENS.

EFFERVESCENT CITRO-TARTRATE OF SODIUM.

Bicarbonate of Sodium, in powder, 17; Tartaric Acid, in powder, 9; Citric Acid, in powder, 6; Refined Sugar, 5: mix the powders thoroughly, place them in a dish or pan of a suitable form heated to between 200° and 220° F. (93·3° and 104·4° C.), and when the particles of the powder begin to aggregate, turn them assiduously until they assume a granular form, then by means of suitable sieves separate the granules of uniform and most convenient size, and preserve them in well-closed bottles. White, and in grains.

Now contains Sugar.

(Not in the foreign Pharmacopœias.)

Medicinal Properties.—A mild saline purgative.

Dose.—60 to 120 grs.

SODII ETHYLATIS LIQUOR.

SOLUTION OF ETHYLATE OF SODIUM.

Metallic Sodium, free from Oxide, 1; Ethylic Alcohol, 20: dissolve the Sodium in the Ethylic Alcohol contained in a flask, the latter being kept cool in a stream of cold Water.

The solution should be recently prepared.

A colourless syrupy liquid, containing 19 p. c. of Ethylate of Sodium, $Na.C_2H_5O$. Sp. g. ·867.

(Not in the foreign Pharmacopœias.)

Medicinal Properties.—Caustic; has been used in the treatment of Nævus, Nasal Polypus, Ozæna, and Lupus.—*L.* '78, ii. 625; *L.* '81, i. 168, 242; *B.M.J.* '85, ii. 344; *B.M.J.* '88, ii. 762.

It may be applied by means of a glass rod, camel's hair brush, or a quill pen. Alcoholic solution of Opium may be added to relieve the pain, but not Chloroform, as it makes an explosive mixture.

SODII HYPOPHOSPHIS.

HYPOPHOSPHITE OF SODIUM.

$NaPH_2O_2$, eq. 88.

Obtained by adding Carbonate of Sodium to solution of Hypophosphite of Calcium so long as a precipitate of Carbonate of Calcium is formed, then filtering the solution and evaporating it to dryness by the heat of a steam-bath, keeping it constantly stirred when the salt begins to solidify.

A white granular salt having a bitter nauseous taste.

Solubility.—1 in 1 of Water; 1 in 2 of Glycerine; almost entirely 1 in 20 of Rectified Spirit.

Tests.—Its solution does not effervesce with acids (absence of Carbonate), and gives only a slight cloudiness with Oxalate of Ammonium (trace of Calcium). 5 grains dissolved in ½ ounce of Distilled Water, and the solution boiled for ten minutes with 11½ grains of Permanganate of Potassium and filtered, should afford a nearly colourless solution.

At a red heat it ignites, emitting spontaneously inflammable phosphuretted hydrogen.

The B.P. also states that its solution "does not give a precipitate with Acetate of Lead," but as all commercial samples which we have seen *do* give a precipitate, even in presence of Acetic Acid, and show no more than traces of phosphate when tested with Magnesia Mixture, we do not think that the above test can be insisted upon.

Dose.—5 to 10 grains as a nervine tonic.

(U.S.; Belg., Hypophosphis Sodii; Dutch, Hypophosphis Natricus; Fr., Hypophosphite do Soudo; Port., Hypophosphito de Soda; Russ., Natrum Hypophosphorosum; not in the others.)

Sodium Hypophosphito, when mixed with an equal quantity of Sodium Nitrate, forms a highly explosive mixture.—*Y.B.P.* '87, 21.

Not Official.

SODII HYPOSULPHIS.

HYPOSULPHITE OF SODIUM.

$Na_2S_2O_3$, $5H_2O$, eq. 248.

Prepared by digesting a solution of Sulphite of Sodium with Sulphur, or by passing Sulphurous Acid gas through a solution of Sulphide of Sodium.

It crystallizes in prisms, which have a bitter saline taste, inodorous. It is easily recognized in solution by adding Hydrochloric Acid, when Sulphur is precipitated and Sulphurous Acid given off.

Solubility.—16 in 10 of water; insoluble in Rectified Spirit.

(Belg., Hyposulphis Sodii; Fr., Hyposulfite de Soude; Port., Hyposulfito de Soda; Russ. and Swiss, Natrum Hyposulfurosum; Span., Hyposulfito Sodico; Swed., Hyposulphis Natricus; U.S.; not in the others.)

Medicinal Properties.—It is given for sarcina ventriculi, also in scrofulous, syphilitic, and rheumatic affections; sometimes used as a **lotion** for parasitic skin diseases (1 in 16 of water).

In cases of blood-poisoning.—*L.* '88, i. 320.

Dose.—10 to 20 grs.

5 lbs. of the salt dissolved in 100 gallons of water was recommended for the ordinary drink for cattle as a preventive against Cattle Plague.

SODII IODIDUM.

IODIDE OF SODIUM.

NaI, eq. 150.

A white crystalline deliquescent powder, which even when apparently dry may contain 15 p.c. of moisture.

Solubility.—11 in 6 of Water; 1 in 3 of Rectified Spirit; 1 in 1 of Glycerine.

Tests.—The aqueous solution does not exhibit a blue colour with solution of Tartaric Acid and Mucilage of Starch (absence of Iodate), and gives only a slight precipitate on the addition of Saccharated Solution of Lime (trace of Carbonate). Solution of Nitrate of Silver added in excess affords a yellowish-white precipitate, which when shaken with diluted Solution of Ammonia yields by subsidence a clear liquid in which excess of Nitric Acid causes very little turbidity (trace of Chloride). 10 grs. require for complete precipitation about 660 grain-measures of the volumetric solution of Nitrate of Silver.

(Austr., Ger., Hung., and Russ., Natrium Iodatum; Dutch, Iodetum Natricum; Fr., Iodure de Sodium; U.S. Sodii Iodidum; not in the others.)

Medicinal Properties.—Given in the same doses and for similar purposes as the Iodide of Potassium.

It is more assimilable than Iodide of Potassium.—*B.M.J.* '86, i. 748, 1092.

Dose.—3 to 10 grs.

SODII NITRAS.

NITRATE OF SODIUM.

$NaNO_3$, eq. 85.

A native salt (Chili Saltpetre), purified by crystallization from water. Colourless.

Solubility.—9 in 10 of Water.

(Belg., Nitras Sodæ; Dutch, Norw., and Swed., Nitras Natricus; Fr., Azotate de Soude; Ger., Hung., Russ., and Swiss, Natrum Nitricum; U.S.; not in the others.)

Used only to prepare Sodii Arsenias.

Not Official.

SODII NITRIS PURUS.

PURE NITRITE OF SODIUM.

$NaNO_2$, eq. 69.

Colourless, deliquescent, crystals.

Solubility.—5 in 6 of Water, 1 in 50 of Rectified Spirit.

Test.—10 grs. dissolved in ½ oz. of Distilled Water and acidulated with 5 fl. drms. of Diluted Sulphuric Acid should yield a colourless solution after 2 minutes when mixed with 8·7 grs. of Permanganate of Potassium dissolved in Water,—indicating at least 95 per cent. of Nitrite of Sodium.

Medicinal Properties.—Has been used in Angina Pectoris.—*L.* '83, ii. 766, 880.

Preferred to the Nitrites of Amyl and Ethyl, because easily given in Water.—*L.* '87, ii. 51; *P.J.* xvii. 1. Closely approaches the action of Nitro-Glycerine, but without its objectionable features.—*Pr.* '83, i. 179.

Dose.—1 to 3 grains.

Antidotes.—Emetics, fresh air, recumbent position, Ergot, and Atropine.

Not Official.

SODII OLEATIS SOLUTIO (*see* p. 423).

SODII ET POTASSII TARTRAS.

See SODA TARTARATA, p. 378.

SODII PHOSPHAS.

PHOSPHATE OF SODIUM.

$Na_2HPO_4 . 12H_2O$, eq. 358.

In transparent, colourless, rhombic prisms, terminating by four converging planes, efflorescent, tasting like common salt.

Solubility.—1 in 6 of water; dissolves in its own water of crystallization below 212° F.; insoluble in Rectified Spirit.

Test.—Heated to dull redness it loses 63 per cent. of its weight, leaving a residue, which, when dissolved in water, gives, with Chloride of Barium, a precipitate almost entirely soluble in diluted Nitric Acid.

(Austr., Ger., Hung., Russ., and Swiss, Natrum Phosphoricum; Belg., Phosphas Sodæ; Dan., Dutch, and Swed., Phosphas Natricus; Fr., Phosphate de Soude; Port., Phosphato de Soda; Span., Fosfato Sodico; U.S.)

Medicinal Properties.—A mild purgative; from its pure saline taste it is called tasteless Aperient Salt. Diuretic in small doses. As it renders the urine alkaline, it is sometimes useful in gout.

Dose.—¼ to 1 oz. Best given in gruel or weak broth.

Used in the preparation of Ferri Phosphas and Syrupus Ferri Phosphatis.

SODII SALICYLAS.

SALICYLATE OF SODIUM.

$(NaC_7H_5O_3)_2, H_2O$, eq. 338.)

Obtained by the action of Salicylic Acid on Carbonate of Sodium or on Caustic Soda.

Small colourless or nearly colourless crystalline scales.

The artificial Salt, as a rule, is white; the natural Salt slightly yellow.

Solubility.—1 in 1 of Water; 1 in 5 of Rectified Spirit; 1 in 30 of Absolute Alcohol.

Tests.—If the aqueous solution be acidulated by Nitric Acid, and the precipitate be dissolved by Rectified Spirit, the mixture is not rendered more than faintly opalescent by Chloride of Barium or Nitrate of Silver (only traces of Sulphate and Chloride); Perchloride of Iron colours a concentrated solution reddish-brown, and a dilute solution violet.

(Austr., Ger., and Hung., Natrium Salicylicum; Belg., Salicylas Sodæ; Dutch, Norw., and Swed., Salicylas Natricus; Fr., Salicylate de Soude; Russ., Natrum Salicylicum; Span., Salicilato Sodico; U.S.; not in the others.)

Medicinal Properties.—Given in acute and chronic rheumatism. A soluble form of Salicylic Acid, and is less irritating. Very useful in Sciatica.

In some forms of Diabetes.—*L.* '80, i. 627; *B.M.J.* '86, i. 737; *T.G.* '85, 446.

It is a very powerful stimulant of the liver, but a very slight stimulant of the intestinal glands.—Dr. Rutherford.

Dose.—10 to 30 grs. twice or thrice a day.

It is sometimes prescribed with Citric Acid, which precipitates the Salicylic Acid. It is better to give it with Citrate of Sodium or Potassium. When prescribed with a Salt of Quinine, Salicylate of Quinine is formed, which is only slightly soluble, and is therefore thrown out.

That made from the natural acid is preferred.

SODII SULPHAS.

SULPHATE OF SODIUM.

Syn. Glauber's Salt.

$Na_2SO_4,10H_2O$, eq. 322.

In colourless, transparent, oblique rhombic prisms; it effloresces on exposure to air.

100 Sulphate of Sodium exposed to heat in a crucible lose 55·9 of water.

Solubility.—1 in 3 of Water, and measures $3\frac{1}{2}$; 10 in 3 of Water at 92° F.; 10 in $4\frac{1}{2}$ of Water at 212° F.; insoluble in Rectified Spirit.

Test.—100 grains dissolved in Distilled Water acidulated with Hydrochloric Acid give, with Solution of Chloride of Barium, a white precipitate, which, when washed and dried, weighs 72·2 grains.

(Austr. and Hung., Natrium Sulfuricum Crystallizatum, also Siccum; Belg., Sulphas Sodæ; Dan., Dutch, Norw., and Swed., Sulphas Natricus; Dan., also Siccatus; Dutch, also Exsiccatus; Fr., Sulfate de Soude Purifié; Ger. and Swiss, Natrium Sulfuricum, also Siccatum; Port., Sulfato de Soda; Russ., Natrum Sulfuricum Depuratum; Span., Sulfato Sodico; U.S.)

Medicinal Properties.—An excellent cooling aperient.

A moderately powerful stimulant of the liver, and a powerful stimulant of the intestine.—Dr. Rutherford.

Dose.—$\frac{1}{4}$ to 1 oz.

Not Official.

PULVIS SODII SULPHATIS ET ZINGIBERIS.—Dried Sulphate of Sodium. 30 grs.; powdered Ginger, 10 grs.; mix.

To be taken in a small tumbler of warm water, in the morning.

SODII SULPHIS.

SULPHITE OF SODIUM.

Na_2SO_3, $7H_2O$, eq. 252.

Obtained by the action of Sulphurous Acid on Carbonate of Sodium or on Caustic Soda.

It crystallizes in white transparent prisms, which effloresce when exposed to the air.

Solubility.—3 in 4 of Water; insoluble in Rectified Spirit; 1 in 25 of Glycerine.

Tests.—The aqueous solution has a neutral or faintly alkaline reaction, which on the addition of Hydrochloric Acid evolves a Sulphurous vapour, but does not become cloudy; in this it differs from Hyposulphite, which deposits Sulphur.

(Port., Sulfito de Soda; U.S.; not in the other Pharmacopœias.)

Medicinal Properties.—Antiseptic; given with success in sarcina ventriculi.

Dose.—10 to 60 grs.

Not Official.

LIQUOR SODII SULPHITIS BENZOICUS.—Sulphite of Sodium, 30; Benzoic Acid, 14; Water, 500.

An Antiseptic solution, recommended by Heckel.—*B.M.J.* '87, ii. 1355.

SODII SULPHOCARBOLAS.

SULPHOCARBOLATE OF SODIUM.

$NaC_6H_5SO_4$, $2H_2O$, eq. 232.

Obtained by dissolving Carbolic Acid in excess of Sulphuric Acid, supersaturating the liquid with Carbonate of Barium, and treating the filtrate with Carbonate of Sodium until no further precipitate forms, filter and evaporate so as to obtain crystals.

Colourless, transparent, rhombic prisms.

Solubility.—1 in 6 of Water; 1 in 150 of Rectified Spirit; 1 in 5½ of Glycerine.

Tests—On ignition it gives vapours of Carbolic Acid and leaves a residue, the solution of which in Water affords a white precipitate with Chloride of Barium insoluble in Hydrochloric Acid. The dilute aqueous solution is rendered violet by solution of Perchloride of Iron; it should not at once be rendered turbid by Chloride of Barium.

(U.S.; not in the other Pharmacopœias.)

Medicinal Properties.—Antiseptic; given in cases of flatulence.

Dose.—10 to 15 grs.

Not Official.

SODII TAUROCHOLAS.

Prepared from ox-bile or pig's-bile.

Has been given in the treatment of gout, in doses of 4 grains at each meal immediately after food. The pills should be coated with Keratin.—*L.* 85, i. 745, 917.

SODII VALERIANAS.

VALERIANATE OF SODIUM.

$NaC_5H_9O_2$, eq. 124.

In dry white masses without alkaline reaction.

Solubility.—1 in 2½ of Water; about 1 in 100 of Rectified Spirit.

Dose.—1 to 5 grs.

Used chiefly to prepare Valerianate of Zinc.

(Not in the other Pharmacopœias.)

Not Official.

SOZOIODOL.

IODOPARAPHENOLSULPHONIC ACID.

A white, shining, crystalline, odourless powder, containing Iodine 52 p.c., Carbolic Acid 20 p.c., and Sulphur 7 p.c., preferably used in the form of its Salts. When required in solution, the Sodium Salt is most applicable, dissolving 1 in 14 of Water or Glycerine. The Potassium Salt, soluble 1 in 100 of water, is preferable as a **dusting powder,** or in **ointments.** Solution of the Zinc Salt, 1 in 28, is suitable for **injection.** The compound with Mercury is an orange-coloured powder.

Medicinal Properties.—It is introduced as a substitute for Iodoform.

It is recommended locally in nasal and pharyngeal disorders, and as an application of great energy in parasitic skin affections.—*T.G.* '89, 132; *B.M.J.* '89, ii. 42.

Sozoiodol cotton and **gauze** containing 5 and 10 p.c.

SPIRITUS.

SPIRIT.

All substances which have undergone the vinous fermentation, and in which it is not completely over, contain Alcohol ready formed, which is separated by distillation. The various kinds are distinguished by varieties of flavour and colour. The redistillation of these produces Rectified Spirit.

When spirit is distilled with aromatic vegetables containing volatile oil, the oil rises for the most part with the spirituous vapour, and condenses along with it in a state of solution.

The Spirits of the British Pharmacopœia are as follows: the formulas will be found under the names of the drugs from which they are prepared:—

Dose.			Proportion of ingredient.
30 to 90 mins.	SPIRITUS ÆTHERIS		1 in 3.
30 to 120 mins.	SPIRITUS ÆTHERIS COMPOSITUS.		
½ to 2 drms.	SPIRITUS ÆTHERIS NITROSI.		
30 to 60 mins.	SPIRITUS AMMONIÆ AROMATICUS.		
30 to 60 mins.	SPIRITUS AMMONIÆ FŒTIDUS.		
1 to 2 drms.	SPIRITUS ARMORACIÆ COMP.		1 in 8.
30 to 60 mins.	SPIRITUS CAJUPUTI	(Oil)	1 in 50.
10 to 30 mins.	SPIRITUS CAMPHORÆ		1 in 10.
20 to 60 mins.	SPIRITUS CHLOROFORMI		1 in 20.
30 to 60 mins.	SPIRITUS CINNAMOMI	(Oil)	1 in 50.
30 to 60 mins.	SPIRITUS JUNIPERI	,,	1 in 50.
30 to 60 mins.	SPIRITUS LAVANDULÆ	,,	1 in 50.

Dose.		Proportion of ingredient.
30 to 60 mins. .	SPIRITUS MENTHÆ PIPERITÆ (Oil)	1 in 50.
30 to 60 mins. .	SPIRITUS MYRISTICÆ . . . . ,,	1 in 50.
	SPIRITUS RECTIFICATUS (88·76 p. c. of Alcohol by volume).	
30 to 60 mins. .	SPIRITUS ROSMARINI . . . . (Oil)	1 in 50.
	SPIRITUS TENUIOR (Rect. Sp. 5, Water 3). Sp. g. ·920.	
	SPIRITUS VINI GALLICI (48 to 56 p. c. Alcohol by volume).	

SPIRITUS ÆTHERIS NITROSI.

SPIRIT OF NITROUS ÆTHER.

Syn. Spiritus Ætheris Nitrici, *Lond. Edin.*

A spirituous solution containing nitrous compounds, aldehyd, and other substances.

Nitric Acid, 3; Sulphuric Acid, 2; Copper, in fine wire (No. 25), 2; Rectified Spirit, a sufficiency: to 20 of the spirit add gradually the Sulphuric Acid, stirring them together; then add to this, also gradually, $2\frac{1}{2}$ of the Nitric Acid. Put the mixture into a retort or other suitable apparatus, into which the copper wire has been introduced, and to which a thermometer is fitted. Attach now an efficient condenser, and applying a gentle heat, let the spirit distil at a temperature commencing at 170° F. (76·7° C.) and rising to 175° F. (79·4° C.) but not exceeding 180° F. (82·2° C.) until 12 have passed over and been collected in a bottle kept cool, if necessary, with ice-cold water; then withdraw the heat, and having allowed the contents of the retort to cool, introduce the remaining $\frac{1}{2}$ of Nitric Acid, and resume the distillation as before, until the distilled product has been increased to 14. Mix this with 40 of the Rectified Spirit, or as much as will make the product correspond to the "Nitric Oxide Test." Preserve it in thoroughly well-closed vessels.

A transparent inflammable liquid. Sp. g. ·840—·845.

Nearly colourless, with a very slight tinge of yellow, with peculiar penetrating apple-like odour, and sweetish, cooling, sharp taste.

Tests.—It effervesces feebly or not at all when shaken with a little Bicarbonate of Sodium. When agitated in a test-tube, with strong solution of Sulphate of Iron, and if a few drops of Sulphuric Acid are then poured down the side of the tube, a deep olive-brown or black zone is produced. Tested as described in the *Pharmaceutical Journal*, 3rd series, vol. xiii. p. 63, Eykman's test; or vol. xv. p. 101, Dymond's modification of Eykman (both are processes for the measurement of the volume of Nitric Oxide given off when the Spirit of Nitrous Ether is heated with an acid solution of Ferrous Sulphate); or vol. xv. p. 673, Allen's test, it should yield at the ordinary temperature 60° F., (15·5° C.) and pressure (30 inches or 760 millimetres of Mercury), and when freshly prepared, seven times its volume of Nitric Oxide gas; and even after it has been kept some time and the vessel containing it has occasionally been opened, it should yield not much less than five times its volume of the gas.

Allen's method consists in treating the sample with an acidulated solution of Iodide of Potassium, and measuring the Nitric Oxide liberated. Fill a nitrometer with strong brine, and then introduce 5 c.c. of the Spirit of Nitrous Ether; then allow 5 c.c. of a strong Solution of Iodide of Potassium to enter, followed by 5 c.c. of diluted Sulphuric Acid. Agitate briskly at intervals, after five minutes adjust the liquid in the two limbs of the nitrometer to the same level, and read off the volume of gas obtained. The British Pharmacopœia requires 35 c.c. or not much less than 25 c.c. from 5 c.c. of Spirit of Nitrous Ether.

A concentrated preparation four or eight times the strength of the B.P. Spirit is frequently used. The advantage of this is, that it may be diluted at any time to exactly the B.P. standard.

To calculate the percentage of real Nitrite of Ethyl, the following data are required:—

1. The sp. g. of the sample examined.
2. 23·55 c.c. of Nitric Oxide, measured at *ordinary* pressure and temperature, weigh 0·03 grm.
3. 30 parts by weight of Nitric Oxide are equivalent to 75 parts by weight of Nitrite of Ethyl.

(Belg., Æther Nitricus Alcoholicus, sp. g. ·850—·860; Æther Nitrosus Spirituosus, Dan. sp. g. ·838 to ·842, Swed., sp. g. ·840; Dutch, Nitris Æthylicus cum Spiritu, sp. g. ·840—·850; Fr., Acide Azotique Alcoolisé; Spiritus Ætheris Nitrosi, Ger. and Russ., sp. g. ·840—·850, Swiss, sp. g. ·845—·855, U.S. sp. g. ·823—·825; Span., Eter Nitroso Alcoholizado.)

Medicinal Properties.—Stimulant, diaphoretic, and diuretic. Useful in dropsy and catarrh.

Dose.—½ to 2 fluid drms.

Incompatibles.—Iodide of Potassium, Sulphate of Iron, Tincture of Guaiacum, Gallic and Tannic Acids. Emulsions are curdled by its addition.

When prescribed with Iodide of Potassium separation of Iodine may be prevented by neutralizing the free acid in the Spirit. Æther. Nit. with Caustic Potash.

Not Official.

ETHYL NITRITE.—As it is to this compound that Spt. Ether. Nit. B.P. is supposed to owe its efficacy, it has been proposed (*P.J.* xviii. 861) to make a pure Ethyl Nitrite by the interaction of Sodium Nitrite, Sulphuric Acid and Alcohol, and to prepare from this a solution in Absolute Alcohol, corresponding to the strength indicated by the official test, 5 p.c. of Glycerine being added as a preservative.

Experiments testing the physiological activity of the B.P. preparation compared with a 2·5 p.c. solution of the pure Ethyl Nitrite showed that both were practically identical.—*P.J.* xix. 490.

Not Official.

SPIRITUS FRUMENTI, U.S.

WHISKY.

An alcoholic liquid obtained from fermented grain by distillation, and containing from 50 to 58 per cent. by volume of Alcohol. It should be not less than 2 years old. Sp. g. not above ·930 nor below ·917.

It has an amber colour, a distinctive odour and taste. If 100 c.c. be very slowly evaporated in a weighed capsule on a water bath, the last portions volatilized should not have a harsh or disagreeable odour (absence of more than traces of fousel oil from grain or potato spirit). The residue fully dried at 212° F. (100° C.) should weigh not more than ·250 gramme, equivalent to ·25 per cent. (absence of undue amount of solids). This residue should have no sweet or distinctly spicy taste (absence of added Sugar, Glycerine, or Spices). It should nearly all dissolve in 10 c.c. of cold Water, forming a solution which is coloured light green by a dilute Solution of Ferric Chloride (traces of oak tannin from casks). 100 c.c. of Whisky should be rendered distinctly alkaline to Litmus by 2 c.c. of the volumetric Solution of Soda (absence of an undue amount of free acid).

SPIRITUS RECTIFICATUS.

RECTIFIED SPIRIT.

Alcohol, C_2H_5HO, eq. 46, with 16 per cent. (by weight) of water;

obtained by the distillation of fermented saccharine fluids, and by the rectification of the product, if it be not of proper density.

Rectified Spirit dissolves Camphor, Balsams, Castor Oil, Iodine, Lithia, Mannite, Phosphorus, Potash (but not the Carbonate), Soda, Sugar, Tannic and Gallic Acids.

When 18 measures of Rectified Spirit are mixed with 18 of water, the mixture condenses into 34 measures.

Tests.—Sp. g. 0·838. Burns with a blue flame without smoke. Remains clear when diluted with Distilled Water. Odour and Taste purely alcoholic. 4 ounces with 30 grain-measures of the volumetric solution of Nitrate of Silver, exposed for twenty-four hours to bright light and then decanted from the black powder which has formed, undergo no further change when again exposed to light with more of the test-solution (absence of Fousel Oil).

Rectified spirit is occasionally met with which gives a yellow colour on the addition of Liquor Ammoniæ.

(In all the Pharmacopœias.)

Medicinal Properties.—Internally a powerful diffusible stimulant. Used in some states of acute disease characterized by excessive debility. Externally, applied diluted to produce cold by evaporation; when evaporation is repressed, it acts as a stimulant. 1 of Rectified Spirit and 2 of Camphor Water mixed is a good evaporating **lotion.** Diluted, it forms a lotion for erysipelas, erythema, burns and scalds while the cuticle is entire, and for sprains and recent bruises.

Preparations.

SPIRITUS TENUIOR. Proof Spirit.*

Rectified Spirit, 5; Distilled Water, 3: mix.
Sp. g. 0·920.

It contains by weight about 49 per cent. and by volume about 57 per cent. of Absolute Alcohol.

SPIRITUS VINI GALLICI. French Brandy.

Spirit distilled from French wine. It has a peculiar flavour, and a light sherry colour derived from the cask in which it has been kept.

Sp. g. ·941. 100 parts contain 48 to 56 parts of Alcohol (by volume).

Pure diluted spirit does not affect the biliary secretion.—Dr. Rutherford.

MISTURA SPIRITÛS VINI GALLICI.

French Brandy, 4 oz.; Cinnamon Water, 4 oz.; the Yolks of 2 Eggs; Sugar, ½ oz.: rub the Yolks and Sugar together, then add the Cinnamon Water and Brandy.

Dose.—1 to 2 oz.

Stimulant, restorative in cases of prostration or last stages of fever.

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* When the sp. g. is ·920 it is called proof; if lighter than this, it is called above proof; if heavier than this, under proof; and the percentage of water, or of Rectified Spirit, sp. g. ·825 (the Inland Revenue standard), by measure, necessary to be added to any sample of spirit to bring it to the standard of proof spirit, indicates the number of degrees the given sample is above or below proof. Thus, if 100 volumes of a spirit require 10 volumes of water to reduce it to proof, it is said to be "10 over proof"; on the other hand, if 100 volumes of spirit require 10 volumes of spirit to raise it to proof, the sample is said to be "10 under proof."

The Spirits of the Pharmacopœias are as follows:—

	Sp. g.	Percentage of Absolute Alcohol by Measure.	
British	·838	Spiritus Rectificatus	88·76*
,,	·920	,, Tenuior	57
Austrian	·830—·834	Sp. Vini Concentratus	90 to 91
,,	·894—·896	,, Dilutus	68 to 70
,,	·920—·925	,, Cognac. (by weight)	45 to 50
Belgian	·794	Alcohol Anhydrus	100
,,	·8276	,, at 92°	92
Danish	·812—·815	Spiritus Alcoholisatus	95 to 96
,,	·830—·834	,, Concentratus	90 to 91
,,	·890—·894	,, Dilutus	68 to 70
,,	·940—·942	,, Tenuis	45 to 46
Dutch	·831—·837	,, Fortior	89 to 91
,,	·887—·892	,, Dilutus	69 to 74
French	·816	Alcohol at 95°	95
German	·830—·834	Spiritus	90 to 91
,,	·892—·896	,, Dilutus	68 to 69
,,	·920—·924	,, Vini Cognac (by weight)	46 to 50
Hungarian	·831—·834	Spiritus	90 to 91
,,	·892	,, Dilutus	70
,,	·919—·924	Cognac. (by weight)	46 to 50
Norwegian	·8311—·8344	Spiritus Concentratus	90 to 91
,,	·9026—·9049	,, Dilutus	64 to 65
,,	·9348	,, Tenuis	50
Portuguese	·834	Alcool at 90°	90
,,	·850	,, 85°	85
,,	·905	,, 65°	65
Russian	·812—·816	Sp. Vini Alkoholisatus	95
,,	·830—·834	,, Rectificatissimus	90
,,	·887—·890	,, Rectificatus	70
,,	·951—·955	,, Dilutus	38
Spanish		Alcohol Anhidro	100
,,		,, de 90°	90
,,		,, de 60°	60
Swedish	·830—·834	Spiritus Concentratus	90 to 91
,,	·901—·905	,, Dilutus	64 to 65
,,	·935	,, Tenuis	50
Swiss	·800—·810	,, Alcoholisatus	96 to 97
,,	·834—·830	,, Concentratus	90 to 91
,,	·889—·892	,, Dilutus	69 to 70
U.S.A.	·820	Alcohol	94
,,	·928	,, Dilutum	53
,,	·925—·941	Sp. Vini Gallici	46 to 55
,,	·917—·930	,, Frumenti	50 to 58

Table of the Amount of absolute Alcohol by weight, or Proof-spirit (Brandy) by volume, in the following Wines, &c., from Dr. Christison's Experiments in 1838.

	Alc. by weight in 100 parts.	Proof-sp. by vol.		Alc. by weight in 100 parts.	Proof-sp. by vol.
Port, weakest	14·97	30·56	Sherry, weakest	13·98	30·84
,, mean of 7 wines	16·20	33·91	,, mean of 13 wines not long in cask	15·37	33·59
,, strongest	17·10	37·27			
White Port	14·97	31·31			

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* This strength is sometimes called "Trois-six" ($\frac{3}{6}$ths), because it requires $\frac{3}{6}$ths or half its volume of water to reduce it to Eau de Vie at 56° p. c. = Proof Spirit.

	Alc. by weight in 100 parts.	Proof-sp. by vol. in 100 parts.
Sherry, strongest	16·17	35·12
,, mean of 9 wines long in cask in E. Indies	14·72	32·30
,, Madre da Xeres	16·90	37·06
Madeira, long in cask in the East Indies	14·09	30·80
,, strongest	16·90	37·00
Teneriffe, long in cask at Calcutta	13·84	30·21
Sercial	15·45	33·65
Dry Lisbon	16·14	34·71
Shiraz	12·95	28·30
Amontillado	12·63	27·60

	Alc. by weight in 100 parts.	Proof-sp. by vol. in 100 parts.
Claret, 1st growth, 1811	7·72	16·95
Château-Latour, Do. 1825	7·78	17·06
Rausan, 2nd growth, 1825	7·61	16·74
Vin Ordinaire, Bordeaux	8·99	18·96
Rives Altes	9·31	22·35
Malmsey	12·86	28·37
Rudesheimer, first quality	8·40	18·44
,, inferior	6·90	15·19
Hambacher, 1st qual.	7·35	16·15
Edinb. ale, unbottled	5·70	12·60
,, 2 yrs. bot.	6·06	13·40
London porter, four months in bottle	5·36	11·91

The alcohol of most true wines is derived solely from the fermentation of the sugar, or alteration of the acids contained in the grape-juice from which they are produced. In others the proportion is increased by adding starch-sugar before or during fermentation. In others, again, it is added directly in the form of brandy, partly to please the palate of consumers, partly because it is thought necessary to make the wine keep well. The strong wines commonly used in Britain, such as Port, Sherry, and the like, are almost all strengthened in this manner, and frequently also the inferior sorts of Bordeaux wine.

Not Official.

STANNI OLEAS.

A greyish coarsely granular powder, insoluble in Alcohol, very slightly soluble in Almond Oil, completely disintegrated and partially dissolved by Ether or Oleic Acid.

UNGUENTUM STANNI OLEATIS.—Oleate of Tin, 60 grs.; Lard, 1 oz.

Of great utility in diseases of the nails; it overcomes the brittle, split, and soft conditions of the nails, and gives them a brilliant lustre.—*B.M.J.* '84, ii. 753; *T.G.* '86, 494.

STAPHISAGRIÆ SEMINA.

STAVESACRE SEEDS.

The dried ripe seeds of *Delphinium Staphisagria.*

(Belg., Semen Staphysagriæ; Fr., Staphisaigre; Port., Paparraz; Span., Estafisagria; U.S., Staphisagria; not in the others.)

Medicinal Properties.—The seeds have been used in ointments for many years as a parasiticide, but it has been discovered that the activity rests in an oil which they contain in rather large quantity. Mr. Balmanno Squire experimented with this Oil, and also with the seeds from which the Oil had been withdrawn by Ether, and found the latter inert.

Preparation.

UNGUENTUM STAPHISAGRIÆ.

Stavesacre Seeds, 1; Benzoated Lard, 2: crush the seeds and macerate them in the Lard kept melted on a water bath for two hours. Strain through calico, and set aside to cool.

B.P.—It contains about 10 per cent. of the Oil of Stavesacre.
(Not in the other Pharmacopœias.)

Not Official.

DELPHININA.—An amorphous yellowish alkaloid of resinous appearance, obtained from Stavesacre. Insoluble in Water, but dissolves in Acidulated Water, in Alcohol, Ether, and Chloroform.

Dose.—$\frac{1}{60}$ grain, and repeat every two hours in neuralgia.—*L.M.R.* '87, 446.

OLEUM STAPHISAGRIÆ.—The Oil obtained by expression from the Seeds. It is insoluble in Rectified Spirit, but dissolves readily in hot Absolute Alcohol.

UNGUENTUM OLEI STAPHISAGRIÆ.—Expressed Oil, 60 mins. ; Lard, 1 oz. Used as a non-irritant remedy in Scabies and in Phtheiriasis.—*B.S.H.*

STRAMONII SEMINA.

STRAMONIUM SEEDS.

The dried ripe seeds of *Datura Stramonium*, an annual cultivated in Britain.

(Belg., Dan., Fr., Port. (Estramonio), Russ., Swed., Swiss, and U.S., leaves and seeds; Austr., Dutch, Ger., Norw., and Span. (Estramonio), leaves only; not in Hung.)

Medicinal Properties.—Antispasmodic and sedative to the respiratory organs. The extract and the tincture are used in convulsive coughs as anti-spasmodics. The extract given with success for hay asthma. Like Belladonna, it causes dilatation of the pupil.

The Leaves, which are Not Official, are much used in asthma, chiefly by smoking in the shape of cigarettes.

An Ointment of the fresh leaves relieves painful Cancer.

Preparations.

EXTRACTUM STRAMONII.

Pack Stramonium Seeds, in No. 40 powder, in a percolator, and pass about their own weight of Washed Ether slowly through them, remove the Ether and set aside; now pour over them Proof Spirit until the seeds are exhausted. Distil off the spirit, and evaporate the residue by a water bath to a proper consistence for forming pills.

Proposed that the exhaustion with Ether be omitted, only traces of fixed oil being removed by the Proof Spirit, and the alkaloidal value the same in either case.—*P.J.* xx. 246.

Dose.—$\frac{1}{4}$ gr., gradually increasing.

(Belg., from **fresh leaves**; Dan. and Russ., from **dried leaves**; Fr., clarified juice of **fresh leaves** evaporated, also alcoholic from **seeds**; Port., aqueous from **dried plant**, and clarified juice from **fresh leaves**; Span., expressed juice of **leaves** clarified and evaporated, also aqueous from **dried leaves** and alcoholic from **dried leaves**; Swiss, alcoholic from **dried leaves**; U.S., alcoholic from **seeds**, also fluid extract from **seeds**.)

TINCTURA STRAMONII.

Stramonium Seeds, bruised, 1; Proof Spirit, 8: macerate forty-eight hours with 6 of the spirit, agitating occasionally; pack in a percolator, let it drain, and pour on the remaining spirit. When it ceases to drop, press, filter, and add Proof Spirit to make 8. =(1 in 8).

Dose.—10 to 30 minims.

(Belg. and Fr., leaves 1 and 5, also Alcoolature with fresh leaves and Spirit equal parts; Dan., Russ., and Swed., seeds 1 and 10; U.S., seeds 1 in 10; Port., dried leaves 1 and 5, fresh leaves 1 and 1, seeds 1 and 5; Swiss, seeds 1 and 5; not in Austr. or Ger.; all by weight.)

Incompatibles.—The Mineral Acids, Caustic Alkalies, Metallic Salts.

Antidotes.—Same as for poisoning with Belladonna, page 93; also Morphine subcutaneously, and Chloroform Inhalation.

Not Official.

DATURINA.—An Alkaloid obtained from Stramonium, identical with Atropine. —*Y.B.P.* '85, 243.

GUTTÆ DATURINÆ.—Sulphate of Daturine, 2 grs.; Water, 1 oz.—*L.O.H.* and *London Hospital.*

UNGUENTUM DATURINÆ.—Daturine, 4 grs.; Vaseline, 1 oz.—*London* and *Guy's.*

PULVIS STRAMONII COMPOSITUS.—Stramonium, Datura Tatula, Cannabis Indica, and Lobelia Inflata, all in powder, of each 6 drms.; Nitre in powder, 1 oz.; Eucalyptus Oil, 30 mins.; mix thoroughly.

It burns well, gives off dense fumes, and affords great relief during asthmatic attacks.—*B.M.J.* '84, ii. 465; *B.M.J.* '87, ii. 494.

Not Official.

STROPHANTHUS.

The seeds of *Strophanthus hispidus*, which is now stated to include the green Kombé and other commercial varieties (*P.J.* xix. 660). The active principle is a glucoside, Strophanthin.

(Austr.; not in the others.)

Medicinal Properties.—A cardiac tonic, similar to Digitalis.

References.—*B.M.J.* '85, ii. 904; *L.* '87, ii. 202; *B.M.J.* '89, i. 603; *P.J.* xx. 328.

Preparations.

TINCTURA STROPHANTHI.—Strophanthus seeds (deprived of their comose appendages) in No. 30 powder, and dried at 110° F., 1 oz; pack in a percolator, and exhaust (of the oil) with about 8 or 10 ozs. of pure Ether (sp. g. ·720). Remove the marc, dry it, gradually heating it to 120° F., again reduce to powder, repack in a percolator, and moisten with Rectified Spirit; macerate for 48 hours, then pour on successive quantities of Spirit until 20 oz. of percolate are obtained.—*B.P.C.* 1888; and *B.M.J.* '87, i. 151.

Dose.—2 to 10 mins.

(Austr., 1 in 20; not in the others.)

STROPHANTHIN.—Colourless, opaque, brittle, and minutely crystalline.

Solubility.—Freely in Water and Rectified Spirit; practically insoluble in Chloroform, Ether, and Bisulphide of Carbon.

Dose.—$\frac{1}{120}$ to $\frac{1}{60}$ grain.

STRYCHNINA.

STRYCHNINE.

An Alkaloid $C_{21}H_{22}N_2O_2$, eq. 334; obtained from Nux Vomica. Discovered by Pelletier and Caventou in 1818.

In right square octahedrons or prisms, colourless and inodorous.

Solubility: 1 in 5760 of Water; 1 in 140 of Rectified Spirit; about 1 in 400 of Proof Spirit; 1 in 6 of Chloroform; nearly insoluble in Ether and Absolute Alcohol.

Tests.—It is not coloured by Nitric or Sulphuric Acid—indicating absence of Brucia. Leaves no ash when burned with free access of air. Pure Sulphuric Acid forms with it a colourless solution, which on the addition of Bichromate of Potassium acquires an intensely violet hue, speedily passing through red to yellow.

(In all the Pharmacopœias except Ger.; Dan., Fr., Russ., Swed., and Swiss have also the Nitrate; Austr., Dutch, Ger., Hung., and Norw. have the Nitrate only; Belg., Fr., Port. (Estrychnina), Russ., Span. (Estricnina), and U.S. have also the Sulphate.)

Medicinal Properties.—Similar to those of Nux Vomica; useful in the treatment of paralysis, especially in cases of lead-poisoning.

Small doses have been given with advantage in epilepsy. Recommended in chronic alcoholism. It is a very active poison.

B. P. Dose.—$\frac{1}{30}$ to $\frac{1}{12}$ of a grain.

Divide by trituration with Sugar of Milk before making into pills.

Preparation.

LIQUOR STRYCHNINÆ HYDROCHLORATIS.

Strychnine, in crystals, 9 grs.; Diluted Hydrochloric Acid, 14 minims; Rectified Spirit, 4 fl. drms.; Distilled Water, 12 fl. drms.; mix the Hydrochloric Acid with 4 drachms of the Water, and dissolve the Strychnine in it by means of heat; then add the Spirit and the remainder of the Water. =(1 in 100).

The solution should not be kept in a cold place.—*P.J.* xvii. 580, 624, 800, 803.

108 minims contain 1 grain of Strychnine.

The strength has been increased slightly to make 1 grain in 100 grain-measures.

Dose.—4 to 10 minims = $\frac{1}{30}$ to $\frac{1}{12}$ gr. Strychnine.

2 minims subcutaneously injected for paralysis.

(Port., *Tinctura* de Estrychnina 1 in 100; not in the others.)

Antidotes.—Chloroform, Belladonna, Tinct. Aconite, Morphine, Tobacco, Hydrate of Chloral in 1 drachm doses.

Animal Charcoal or Tannic Acid, followed by an emetic, or the stomach-pump. Bromide of Potassium, in $\frac{1}{2}$ oz. dose in water, with 30 grs. of Chloral. 2 drms. of the Bromide, with or without 10 grs. of Chloral, may be given every 15 or 20 minutes if necessary. Nitrite of Amyl inhalations, the Amyl being poured freely on a handkerchief and held close to the nose. The patient may be kept fully under Chloroform or Ether. Curare, $\frac{1}{3}$ grain, by hypodermic injection. Artificial respiration if possible. (*Murrell*).

A case of recovery after taking 3 grs. Strychnine.—*L.* '67, ii. 41, 118.

8 grains of Morphine said to be an antidote for 1 gr. of Strychnine.—*L.*'71, ii. 840.

STYRAX PRÆPARATUS.

PREPARED STORAX.

A balsam prepared from the inner bark of *Liquidambar orientalis* in Asia Minor, purified by solution in Rectified Spirit, filtration, and evaporation.

Intense brown.

(Austr., Styrax Liquidus; Belg., Dutch, Fr., Ger., Hung., Norw.; Port. and Span., Estoraque Liquido; Swed., Swiss, and U.S.; not in Dan. or Russ.)

Medicinal Properties.—Stimulant and expectorant. Similar in action to the Balsams of Peru and Tolu. Recommended also in gonorrhœa and leucorrhœa; said to be equal to Copaiba, and less disagreeable.

Dose.—10 to 20 grs. twice a day, gradually increasing.

Contained in Tinctura Benzoini Comp.

Not Official.

UNGUENTUM STYRACIS (*B.S.H.*).—Prepared Storax, 2 fl. drms.; Prepared Lard, 1 oz.; mix.

Used in scabies.

SUCCI.

JUICES.

Juices expressed from fresh medicinal plants, and preserved by the addition of Spirit, were introduced by the Author in 1835 (*Pharm. Journ.* vol. i.). By thus preserving the juice of the plant, its properties are not impaired by the action of air during the time necessary to dry the leaf for Tincture, nor by the action of both air and heat during the time necessary to evaporate the juice to the consistence of an Extract.

They were found in practice superior to the Tinctures, and have been since employed, especially by medical men in private practice, to the present time.

The following are the juices of the British Pharmacopœia, the formulas for which will be found under the names of the drugs from which they are prepared:—

SUCCUS BELLADONNÆ . . .	Dose, 5 to 15 mins.
SUCCUS CONII	,, ½ to 1 drm.
SUCCUS HYOSCYAMI	,, ½ to 1 drm.
SUCCUS SCOPARII	,, 1 to 2 drms.
SUCCUS TARAXACI.	,, 1 to 2 drms.

These consist of 3 parts of Juice and 1 of Rectified Spirit.

Juices which are not official are enumerated in the Index.

The Alcoolatures of the Fr. are made by digesting equal weights of fresh plant and Rectified Spirit together for 10 days; press and filter. Aconite, Belladonna, Conium (Ciguë), Digitalis, Eucalyptus, Henbane (Jusquiame), Stramonium Leaves, Flowers of Colchicum, and Bulb of Colchicum, are so prepared.

Not Official.

SUCCINUM.

AMBER.

A fossil resinous exudation from *Pinites succinifer*, an extinct coniferous tree, on the shores of the Baltic.

Hard and brittle, yellow or yellowish-red.

(Belg., Dan., Dutch, Fr. (Succin), Port. (Ambar), Russ., Span. (Sucino), and Swed.).

Preparations.

OLEUM SUCCINI RECT.—A volatile Oil obtained by the destructive distillation of Amber, and purified by subsequent rectification.

Dose.—1 to 3 minims on Sugar.

Externally it is stimulant and rubefacient.

(Belg. and Hung., Ol. Succini Rect.; Dan. and Swed., Pyroleum Succini, Crude and Rect.; Norw., Pyroleum Succini Rect.; Port., Oleo de Ambar; Russ., Oleum Succini Empyreumaticum, Crude and Rect.; Span., Aceite Pirogenado de Sucino; Swiss and U.S., Oleum Succini.)

LINIMENTUM SUCCINI.—Oil of Amber, 1; Spirit of Camphor, 1; Spirit of Hartshorn, 1: mix.

A domestic embrocation for Whooping Cough.

TINCTURA SUCCINI.—Amber, in fine powder, 1; Rectified Spirit, 16. Digest 7 days.

Dose.—25 minims in water for headache.

(Dutch, 1 Amber and 5; Fr., Succin, 1; Alcohol (80°), 10; Port., Tinctura de Ambar Composta, 2·8 Oil in 10; Swed., 1 Amber in 5; not in the others.)

Not Official.

SULPHONAL.

DIETHYL-SULPHON-DIMETHYL-METHANE.

Colourless, tasteless, prismatic crystals. Melts at 125·5° C.

Solubility.—1 in 500 of Water; 1 in 15 of boiling Water; 1 in 90 of Rectified Spirit; 1 in 3 of Chloroform; 1 in 90 of Ether.

Medicinal Properties.—Hypnotic. It produces no secondary evil effects.

B.M.J. '88, i. 864; *B.M.J.* '88, ii. 31, 1450, 1454; *B.M.J.* '89, i. 952; *L.* '89, ii. 1051—1054; *B.M.J.* '89, ii. 689, 817; *P.J.* xviii. 901, 1005; *C.D.* '88, i. 785.

Dose.—15 to 60 grains; suspended in Water with Compound Tragacanth Powder, 120 grs. to 6 ounces of Water; or in powders, one to be taken in hot water.

Not Official.

SULPHUR.

SULPHUR.

S, eq. 32.

Sulphur occurs native, and is found in masses or in the powdery form mixed with various impurities. It is abundant in volcanic countries, as in Sicily, Naples, and the Roman States. It exists in this country in combination with Iron and Lead. It readily volatilises, and when the vapours are passed into a large brick chamber kept cold, it condenses in fine powder (sublimed Sulphur), but when a small chamber is used and kept at a temperature about 120° C., it condenses in the liquid form and is run into moulds (Roll Sulphur):

(Belg., Sulphur Venale; Fr., Soufre; Port., Enxofre; Span., Azufre; Swed.; not in the others.)

SULPHUR PRÆCIPITATUM.

PRECIPITATED SULPHUR.

A greyish-yellow soft powder, free from grittiness, and with no smell of Sulphuretted Hydrogen. When heated in an open vessel, it burns with a blue flame and the evolution of Sulphurous Acid.

Test.—Entirely volatilized by heat; dissolves easily and completely in Bisulphide of Carbon. Under the microscope it is seen to consist of opaque globules without any admixture of crystalline matter; otherwise corresponds with Sublimed Sulphur.

LAC SULPHURIS of former Pharmacopœias contained a large amount of Sulphate of Lime.

(In all the Pharmacopœias; Fr., Soufre Précipité; Port., Enxofre Precipitado; Span., Azufre Precipitado.)

Medicinal Properties.—Similar to those of Sulphur Sublimatum, only more active. Mixed with Milk and rubbed till smooth, children take it readily.

Dose.—20 to 60 grs.

Not Official.

LOTIO SULPHURIS.—Precipitated Sulphur, ½ oz.; Glycerine, 120 mins.; Rectified Spirit, 1 oz.; Rose Water, 3 ozs.; Lime Water, 3 ozs.

Recommended in acne of the face.—*L.* '87, i. 66.

TROCHISCI SULPHURIS COMP.—Each lozenge contains 5 grs. of Precipitated Sulphur, and 1 gr. of Cream of Tartar.

A convenient form of administering Sulphur as a general laxative, in cases of sluggish liver, bleeding piles, and habitual constipation.—*L.* '89, i. 665

UNGUENTUM SULPHURIS PRÆCIPITATI.—Precipitated Sulphur, 2; Carbonate of Potassium, 1; Lard, 8: mix.

Excellent for Scabies.

SULPHUR SUBLIMATUM.

SUBLIMED SULPHUR.

A slightly gritty powder of a fine greenish-yellow colour; without taste and without odour until heated.

Tests.—Entirely volatilized by heat. Solution of Ammonia, agitated with it and filtered, does not on evaporation leave any residue—indicating the absence of Sulphide of Arsenic.

The B.P. test of freedom from acidity can only be expected from "washed" Sulphur. Commercial Sublimed Sulphur is always more or less acid.

Solubility.—Insoluble in water. Soluble in Oils and Turpentine with heat. Only partially Soluble in Bisulphide of Carbon.

(In all the Pharmacopœias; Austr. has also Sulphur Depuratum; Belg. Sulphur Depuratum; Dan., Ger., Hung., Russ., Swed., and Swiss, Crude and Washed; Dutch, Sulfur Depuratum; Fr., Soufre Sublimé, also S.S. Lavé; Norw.; Port., Enxofre Sublimado; Span., Azufre Sublimado.)

Medicinal Properties.—Laxative. Employed internally in hæmorrhoidal affections and chronic rheumatism; externally for skin diseases, especially scabies.

Dose.—20 to 60 grs. in treacle or milk.

Used in the preparation of Antimonium Sulphuratum, Emplastrum Ammoniac c. Hydrargyro, Emplastrum Hydrargyri, Pulv. Glycyrrhizæ Compositus, Potassa Sulphurata, and Sulphuris Iodidum Sulphur Præcipitatum.

Preparations.

CONFECTIO SULPHURIS.

Sublimed Sulphur, 4 oz.; Acid Tartrate of Potassium, 1 oz.; Syrup of Orange Peel, 4 oz.; Tragacanth, in powder, 18 grs.: rub well together. =(1 in 2¼).

Tragacanth added to give it a better consistence, and Glycerine might be added to keep the moisture uniform.

Dose.—60 to 120 grs.

(Not in the other Pharmacopœias.)

UNGUENTUM SULPHURIS.

Sublimed Sulphur, 1; Benzoated Lard, 4: mix. =(1 in 5).

(Belg., 1 in 5, also alkaline 1 in 5½; Fr., Pommade, 1 in 10, also precipitated, 1 in 10; Port., 3 in 10, also compound, 1 in 5; Russ., 1 in 3, also compound, 1 in 10; Span., 1 in 5; Swiss, 3 in 10, also compound, 1 in 10; U.S., 3 in 10: Austr., Dutch, Hung., Norw., and Swed. (compound see below), 3 in 20.)

Precipitated Sulphur makes a more active Ointment, and Essence of Lemon covers the odour.

An ointment ¼ of B.P. strength exerts a destructive effect on the ringworm fungus.—*B.M.J.* '89, i. 398.

Not Official.

UNGUENTUM SULPHURIS COMPOSITUM. *Syn.* UNG. AD SCABIEM VIENNENSE. WILKINSON'S OINTMENT.

Sulphur, 15; Chalk, 10; Pitch, 15; Lard, 30; Soap, 30.

This is the formula official in Austr., Dutch, Hung., Norw., and Swed.

CHELSEA PENSIONER.—Sulphur, 6; Mustard, 6; Powdered Guaiacum, 3; Rhubarb, 1½; Nitre, 1½: mix. Honey or Treacle sufficient to make it into an Electuary.

Dose.—A teaspoonful every alternate evening for rheumatism; it is also taken in the morning as an aperient to regulate the bowels.

Not Official.

SULPHURIS CHLORIDUM.

CHLORIDE OF SULPHUR.

S_2Cl_2, eq. 135.

Prepared by the direct union of Chlorine with Sulphur, forming a mobile reddish-yellow liquid, sp. gr. 1·69, with a penetrating disagreeable odour, and fuming strongly in air. It dissolves without decomposition in Bisulphide of Carbon or Benzol, but is decomposed by water, Alcohol and Ether.

Preparation.

UNGUENTUM SULPHURIS HYPOCHLORITIS.—The ointment prescribed under this name is composed of Sulphur Lotum, 1 oz.; Chloride of Sulphur, 1 drm.; Spermaceti Ointment, B.P. 1867, 8 oz.; Essential Oil of Almonds, 80 min., is usually added to mask the disagreeable odour.

Used in the treatment of Scabies and Acne.

SULPHURIS IODIDUM.

IODIDE OF SULPHUR.

SI, eq. 159.

Iodine, 4; Sublimed Sulphur, 1: rub together in a glass or earthenware mortar until they are thoroughly mixed. Transfer to a flask, close the orifice loosely, and apply a heat gently so that the colour of the mass shall become gradually darkened. When the colour has become uniformly dark throughout increase the heat so as to produce liquefaction. Then incline the flask in different directions, in order to return into the liquid any portion of the Iodine which may have been condensed on the inner surface of the vessel. Lastly, withdraw the heat, and when the liquid has congealed, remove the mass by breaking the flask, reduce it to pieces, and keep these in a well-stoppered bottle.

A greyish-black solid, with a radiated crystalline appearance.

Solubility.—1 in 60 of Glycerine; 1 in 4 of Bisulphide of Carbon. Insoluble in Water.

Test.—If 100 grs. be thoroughly boiled with Water, the Iodine will pass off in vapour, and about 20 grs. of Sulphur will remain.

(Belg., Ioduretum Sulphuris; Dutch, Iodetum Sulphuris c Sulphure; Port., Enxofre Iodado; Russ. and Swiss, Sulfur Iodatum; Span., Ioduro de Azufre; U.S., Sulphuris Iodidum; not in the others.)

Medicinal Properties.—The Ointment is an excellent remedy for acne punctata and other eruptions of the skin.

Preparation.

UNGUENTUM SULPHURIS IODIDI.

Iodide of Sulphur, 30 grs.; Hard Paraffin ¼ oz.; Soft Paraffin ¾ oz.; triturate the Iodide of Sulphur in a glass or porcelain mortar, and gradually add the melted mixture of Hard and Soft Paraffin, rubbing them together until the ointment is perfectly cold and free from grittiness. =(about 1 in 15½).

(Port., 1 in 10; not in the other Pharmacopœias.)

Now made with the Paraffins in place of Lard.

SUMBUL RADIX.

SUMBUL ROOT.

The dried transverse sections of the root of *Ferula Sumbul.*

Imported from Russia and India.

In slices of two to four inches in diameter, possessing the odour of Musk, which it long retains.

(Port., Sombula; Russ. and U.S.; not in the other Pharmacopœias.)

Medicinal Properties.—A nerve tonic.

Preparation.

TINCTURA SUMBUL.

Sumbul Root, in No. 40 powder, 1; Rectified Spirit, 8: macerate forty-eight hours with 6 of the spirit, agitating occasionally; pack in a percolator, let it drain, and pour on the remainder of the spirit, and when it ceases to drop, press, filter, and add Rectified Spirit to make 8. =(1 in 8).

Now made with Rectified in place of Proof Spirit.

Dose.—10 to 30 minims.

(Russ. 1 and 5; U.S. 1 in 10; both by weight; not in the others.)

SUPPOSITORIA.

Suppositories are for the most part prepared by the following general formula:—

Mix the Medicinal portion with a small quantity of the Oil of Theobroma, by rubbing them together, and add the mixture to the remainder of the Oil of Theobroma, previously melted at a low temperature. Then mix thoroughly without applying more heat, and immediately pour the mixture into suitable moulds. The moulds, previously made cold, must be kept so in summer by immersion in iced water.

All difficulty in removing the suppositories from the moulds may be obviated by having the moulds previously wiped over with some oiled lint.

		Each contains
SUPPOSITORIA ACIDI CARBOLICI c. SAPONE		1 gr.
SUPPOSITORIA ACIDI TANNICI		3 grs.
SUPPOSITORIA ACIDI TANNICI c. SAPONE		3 grs.
SUPPOSITORIA HYDRARGYRI.	Mercurial Ointment	5 grs.
SUPPOSITORIA IODOFORMI		3 grs.
SUPPOSITORIA MORPHINÆ.	Hydrochlorate of Morphine	½ gr.
SUPPOSITORIA MORPHINÆ c. SAPONE.	ditto	½ gr.
SUPPOSITORIA PLUMBI COMPOSITUM.	Acetate of Lead	3 grs.
	Powdered Opium	1 gr.

Suppositories, not official, are enumerated in the Index.

Not Official.

SYMPHYTI RADIX.

COMMON COMFREY ROOT.

The root is black without and white within. Flowers yellow, common in ditches near rivers.

(Belg., Radix Symphiti; Fr., Consoude; Port., Consolda Maior; Span., Sinfito Mayor; not in the others.)

Medicinal Properties.—Astringent, mucilaginous, glutinous; useful to form cases for injured limbs. The black rind is scraped off, and the mucilaginous root is then scraped carefully into a nice even pulp; this spread of the thickness of a crown-piece upon cambric or old muslin, is wrapped round the limb and bandaged over; it shortly stiffens, and forms a casing superior to starch, giving support and strength to the part. The Author knew a bone-setter who practised more than fifty years ago, and rendered himself famous for setting compound fractures with this root, which he kept secret, and he never removed the bandage after the first dressing, until the limb was well.

SYRUPI.

SYRUPS.

Syrups are apt to ferment or mould when made with too little sugar, and to crystallize when too concentrated; to avoid these inconveniences which have arisen from former instructions for the preparation of this class of medicines, the British Pharmacopœia usually directs that the product of each syrup shall be made up to one constant weight, thereby ensuring uniformity of consistence, which is perhaps as good a practical guide as taking the specific gravity, when cooled to 60° F. In the case of simple syrup the specific gravity given, namely, 1·330, is a very proper one for ordinary temperatures, but it must be understood that if the syrup be exposed to a very low temperature, say 40° F., it may crystallize. It keeps perfectly well, however, at a range of temperature from 50° F. upwards.

Although 1·330 is accepted as the best gravity for a permanent Syrup, the B.P., without any very obvious reason, makes some exceptions to the rule—*e.g.*, Syr. Ferri Iodidi, 1·385; Syr. Ferri Phosphatis, 1·305, Syr. Rhei, 1·310. In the case of Syr. Aurant. and Syr. Zingib., where the drug is introduced as a tincture, the gravity is of course lowered.

The following are the syrups of the British Pharmacopæia, the formulas for which will be found under the names of the drugs from which they are prepared:—

Dose.		
	SYRUPUS. *See* SACCHARUM	Sugar 1 in 1⅙.
1 drm. .	SYRUPUS AURANTII	Tinct. 1 in 8.
1 drm. .	SYRUPUS AURANTII FLORIS	O.F. Water 1 in 6¾.
½ to 2 drs.	SYRUPUS CHLORAL	1 in 5½.
½ drm. .	SYRUPUS FERRI IODIDI,	4⅓ grs. (anhydrous) in each drm.
1 drm. .	SYRUPUS FERRI PHOSPHATIS,	1 gr. (anhydrous) in each drm..
1 drm. .	SYRUPUS HEMIDESMI	1 in 8.
1 drm. .	SYRUPUS LIMONIS	Juice 1 in 2.
1 drm. .	SYRUPUS MORI	Juice 1 in 2.
1 drm. .	SYRUPUS PAPAVERIS	Capsules 1 in 2¼.
1 drm. .	SYRUPUS RHEI	Root 1 in 15.
1 drm. .	SYRUPUS RHŒADOS	Petals 1 in 3½.
1 drm. .	SYRUPUS ROSÆ GALLICÆ	Petals 1 in 17¼.
½ drm. .	SYRUPUS SCILLÆ	1 in 16.
1 drm. .	SYRUPUS SENNÆ	1 in 2.
1 drm. .	SYRUPUS TOLUTANUS. *See* BALS. TOLU.	1 in 29.
1 drm. .	SYRUPUS ZINGIBERIS	Strong Tinct. 1 in 26.

Syrups that are not official are enumerated in the Index.

TABACI FOLIA.

LEAF TOBACCO.

The dried leaves of the Virginian Tobacco, *Nicotiana Tabacum.*

When dry they yield about 20 p.c. of Ash, containing a large proportion of Potash. The Virginian leaf contains about 6 p.c. of Nicotine, and is one of the strongest varieties of Tobacco.

Test.—It yields, when distilled with Solution of Potash, an alkaline fluid which has the peculiar odour of Nicotina, and precipitates with Perchloride of Platinum and Tincture of Galls.

(Belg., Dan., Ger., Norw., Russ., Swed., and Swiss, Folia Nicotiana; Fr., Nicotiane ou Tabac; Port. and Span., Nicociana; U.S., Tabacum; not in Austr., Dutch, or Hung.)

Medicinal Properties.—A powerful sedative, especially affecting the heart, frequently causing great depression. Narcotic and emetic. Smoked, it is sedative and expectorant in various cases of asthma. Occasionally used as snuff for affections of the head. It is dangerous on account of its poisonous properties, but useful as an antidote to the poison of Strychnine.

Antidotes.—In case Tobacco has been swallowed, an emetic; in any case stimulants internal and external. Recumbent position; Tannic Acid; Nux Vomica or Strychnine.

Not Official.

NICOTINE ($C_{10}H_{14}N_2$, eq. 162).—A nearly colourless volatile liquid alkaloid, sp. g. 1·027, of an acrid burning taste, inflammable, miscible with Water, Ether, Alcohol, and the fixed oils; capable of being formed into crystalline salts. To this alkaloid Tobacco owes its activity. Nicotine is a powerful poison.

(Russ and Swed.; not in the other Pharmacopœias.)

TAMARINDUS.

TAMARIND.

The preserved pulp of the fruit of *Tamarindus Indica*, imported from the West Indies.

Test.—A piece of bright iron left in contact with the pulp for an hour does not exhibit any deposit of copper—the Tamarind acid would take up Copper if such vessels were used.

(In all the Pharmacopœias.)

Medicinal Properties.—Refrigerant and slightly laxative. Infused with water, forms a cooling drink in febrile affections.

Dose.—¼ oz. and upwards.

Contained in Confectio Sennæ.

TARAXACI RADIX.

DANDELION ROOT.

The fresh and dried roots of *Taraxacum officinale*, collected in the autumn from indigenous plants.

Much difference of opinion exists as to the proper time of taking up the root. Some think that the winter, when it yields the thick albuminous juice, is the best; others prefer the thin and bitter juice yielded by the root in the early summer. The Author inclined to the former opinion, and so expressed himself in an article furnished to Mr. Brande,* and inserted by him in his "Materia Medica," published in 1839. Observations made throughout the year are there given.

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* Brande's "Materia Medica," published in 1839, is now very scarce; the following interesting facts have been copied from it to show the quantity of juice required to produce 1 lb. of extract in the different months.

"In January and February, 4 to 5 lbs.; in March, 6 or 7 lbs.; in April and May, 8 to 9 lbs.; June, July, and August, 6 to 7 lbs.; in September and October, 4 to 5 lbs.; in November and December, 4 lbs. During November and December the root is in the most vigorous condition, and most abundant in those ingredients upon which its medicinal powers depend. Frost has a singular effect upon the growing roots, causing the bitterness to decrease, and sweetness to take its place; it is also observable, on the disappearance of the frost, the sweetness disappears and the bitter returns in a stronger degree. From Mr. Squire's analysis, Taraxacum juice contains gum, albumen, gluten, an odorous principle, and a crystallizable bitter principle, soluble in alcohol and water."

Juice taken from roots dug up in November, before any frost appeared, had a specific gravity of 1·080; 28 pounds of root yielded 7 pounds of Juice, from which, when heated to 212° F., besides 4 ounces of insoluble matter, it left on evaporation 28 ounces of Extract. This is not a correct average, for when in the highest perfection—

100 of fresh root yield 30 of juice = 8 of extract. 100 of root, when dried, weigh 25.

(In all the Pharmacopœias; Fr. Pissenlit.)

Medicinal Properties.—A mild laxative and cholagogue. In dropsy, arising from obstruction of the liver, it is given in combination with purgatives.

A very feeble stimulant of the liver.—Dr. Rutherford.

Preparations.

DECOCTUM TARAXACI.

Dried Dandelion Root, sliced and bruised, 1; Distilled Water, 20: boil ten minutes and strain. The product should be made up to 20. =(1 in 20).

Dose.—2 to 4 oz.

(Span., 1 of leaves in 46; not in the other Pharmacopœias.)

EXTRACTUM TARAXACI.

Crush fresh Dandelion Root, press out the juice, and allow it to deposit; heat the clear liquor to 212° F. (100° C.), and maintain the temperature for ten minutes; then strain and evaporate by a water bath at a temperature not exceeding 160° F. (71·1° C.) to a proper consistence for forming pills.

100 pounds of fresh root yield 30 pounds of juice = 8 pounds of extract.

Dose.—5 to 15 grs.

(Swiss and U.S., from **fresh root**; Fr., from **dried leaves**; Austr., Belg., Dan., Dutch, Ger., Hung., Norw., Port., Russ., and Swed., from **whole plant**; Span., clarified juice of **fresh leaves** evaporated, also aqueous from **dried leaves.**)

EXTRACTUM TARAXACI LIQUIDUM.

Dry Dandelion Root, in No. 20 powder, 40; Proof Spirit, 80; Distilled Water, a sufficiency. Macerate the Dandelion in the Spirit forty-eight hours; then press out 20 of liquid and set this aside. Macerate the marc with 40 to 60 of the Water forty-eight hours; press out and strain the liquid, and evaporate on a water bath to about 18. Mix the spirituous and aqueous extractions together and make up with Distilled Water to 40. Finally filter.

When made in this way it deposits greatly. A much better fluid extract is made by percolation with a mixture of Proof Spirit and Water in equal proportions.

Dose.—15 to 120 minims.

(Dan., Russ., and U.S.; not in the other Pharmacopœias.)

SUCCUS TARAXACI.

Bruise Dandelion Root in a stone mortar, press out the Juice, and to every 3 measures of Juice add 1 of Rectified Spirit: set aside seven days and filter. Keep it in a cool place.

Dose.—60 to 120 minims.

(Not in the other Pharmacopœias.)

Not Official.

TEREBENE.

The liquid obtained from Oil of Turpentine after successive treatments with a small proportion of Sulphuric Acid till the optical rotation is reduced to zero.

Sp. g. about ·864. Distils between 312° and 330° F.

Solubility.—1 in 6½ of Rectified Spirit; in all proportions of Absolute Alcohol or Chloroform; 1 in 3¾ of Ether; 5 in 8 of Glacial Acetic Acid; very sparingly in Water.

Test.—It is optically inactive on polarized light.

(Not in the Foreign Pharmacopœias.)

Medicinal Properties.—Used for the relief of winter cough (chronic bronchitis). Five or six drops given on Sugar every four hours, or suspended with Mucilage, or used as a spray, or as an antiseptic inhalation from a respirator.—*B.M.J.* '86, i. 259, 392; *P.J.* xvi. 611; *B.M.J* '87, i. 796.

Flexible capsules are made containing 5 and 10 minims each.

TEREBINTHINA CANADENSIS.

CANADA BALSAM.

The Turpentine obtained by puncturing or incising the bark of the trunk and branches of *Pinus balsamea.* A transparent liquid of a pale straw colour, and tenacious consistence.

Solubility.—Soluble in all proportions of Benzol, Chloroform, and Ether; 1 in 3 (*or less*) of Absolute Alcohol; 1 in 1 (*or less*) of Rectified Spirit.

Dose.—20 to 30 grains.

(U.S.; not in the other Pharmacopœias.)

Used in the preparation of Charta Epispastica and Collodium Flexile.

Used as a medium for mounting microscopical objects, and as a cement for glass.

Not Official.

TEREBINTHINA CHIA.

CHIAN TURPENTINE.

An oleo-resin obtained from the incised trunk of *Pistacia terebinthus*, collected in Scio.

A soft solid with a characteristic odour. When treated with its own weight of Absolute Alcohol or Pure Ether, the bulk dissolves, leaving a residue.

(Fr., Térébinthine de Chio: Port., Terebinthina de Chio; Span., Trementina de Chio; not in the others.)

It was official in the London and Edinburgh Pharmacopœias.

Medicinal Properties.—Has been recommended in the treatment of cancer.

References.—*L.* '80, i. 477; *L.* '87, ii. 1005, 1144, 1190, 1244.

Dose.—5 to 10 grains.

Preparation.

PILULA TEREBINTHINÆ CHIÆ.—Chian Turpentine, 6 grs.; Flowers of Sulphur, 4 grs. To be made into 2 pills, and taken every four hours.

TEREBINTHINÆ OLEUM.

OIL OF TURPENTINE.

The oil distilled by aid of steam from the oleo-resin (Turpentine) obtained from *Pinus Australis*, *Pinus Tæda*, sometimes from *Pinus Pinaster* and *Pinus Sylvestris*; rectified if necessary. Colourless.

English Oil of Turpentine is almost wholly imported from America, and is the product (mainly) of Pinus Australis and P. Tæda. German and Russian Oil is principally distilled from P. Sylvestris; French Oil from P. Maritima. Hungarian Turpentine is distilled from the cones of P. Pumilio, and Carpathian Turpentine from P. Cembra.

The specific gravities vary between ·860 and ·880; the boiling point approximates to 160° C. The French Oil is strongly lævo-rotary, but both English and Russian Oils are dextro-rotary.

Oil of Turpentine, especially Russian, when exposed to the continuous action of atmospheric air in presence of water, develops a large quantity of Hydrogen Peroxide, Camphoric Acid, and other oxygenated products, which form the basis of the "Sanitas" series of disinfectants.

Oil of Turpentine dissolves Wax, Iodine, Sulphur, Phosphorus, fixed oils, and resins forming varnish.

Solubility.—1 in 6½ of Rectified Spirit; in all proportions of Absolute Alcohol, Bisulphide of Carbon, and Chloroform; 3 in 10 of Ether; 1 in 3 of Glacial Acetic Acid.

(Austr., Dutch, Ger., Hung., Russ., Swiss, and U.S., Oleum Terebinthinæ; Belg., Essentia Terebinthinæ; Dan., Norw., and Swed., Ætheroleum Terebinthinæ; Fr., Essence de Térébenthine; Port., Essencia de Terebinthina; Span., Esencia de Trementina.)

Medicinal Properties.—Antiseptic, stimulant, diuretic, anthelmintic. Useful in passive hæmorrhage from the various organs; in large doses purgative, sometimes causing nausea, vomiting, and intoxication. It especially affects the kidneys, and the mucous membrane of the genito-urinary organs. Antispasmodic in hysterical affections. Used as an inhalation in chronic bronchitis; as an enema for obstinate constipation, and for flatulency of the bowels. Externally rubefacient and counter-irritant; employed as a liniment in chronic inflammation and rheumatism.

Flies and gnats are kept away by the odour of Turpentine.

Dose.—10 to 30 minims; as an anthelmintic, 2 to 4 drms. May be given in Mistura Amygdalæ.

1 drm. of Mucilage, with diligent trituration, renders ½ drm. of Oil of Turpentine emulsive, with 1 oz. of Distilled Water.

30 grs. Powder of Acacia rubbed first with 1 drm. of Oil of Turpentine, then with 1 drm. of Water, and lastly triturating whilst adding gradually 1 oz. Distilled Water, makes a good emulsion.

Antidotes.—Emetic, Epsom Salts, demulcent drinks, Morphine or Laudanum to relieve pain.

Preparations.

CONFECTIO TEREBINTHINÆ.

Oil of Turpentine, 1; Liquorice Powder, 1; Clarified Honey, 2: mix. =(1 in 4).

Rub the first two together, and add the Honey; but if the Turpentine separates pour it off, and re-add it gradually with constant trituration, and it will unite.

Dose.—60 to 240 grs. daily; for Tænia, 2 to 4 oz.

(Not in the other Pharmacopœias.)

It is much used in Dublin as a diffusible stimulant in chronic bronchitis, and is very palatable if rubbed up with Peppermint Water.

ENEMA TEREBINTHINÆ.

Oil of Turpentine, 1 oz.; Mucilage of Starch, 15 oz.: mix for 1 enema.

(Not in the other Pharmacopœias.)

LINIMENTUM TEREBINTHINÆ.

Oil of Turpentine, 16; Camphor, 1; Soft Soap, 2; Distilled Water, 2: mix the Soap with the Water; dissolve the Camphor in the Turpentine; rub these together till thoroughly mixed. =(1 in 1¼).

This frequently makes a jelly, which, on the addition of Water, forms a fluid emulsion. The quantity of Water required varies from two to three times that given in the formula.

(U.S. Resin Cerate 65, Ol. Turpentine 35; Ger. Ol. Turpentine 20, Soft Soap 27, Carbonate of Potassium 3; not in the others.)

LINIMENTUM TEREBINTHINÆ ACETICUM.

Oil of Turpentine, 4; Glacial Acetic Acid, 1 (by weight); Liniment of Camphor, 4: mix. =(about 1 in 2).

About the same strength in Acetic Acid, but stronger in Oil of Turpentine and Liniment of Camphor.

An imitation of St. John Long's celebrated Liniment.

(Swed. (Linimentum Terebinthinæ Acetatum), 9 Oil in 20; Swiss (Linimentum Terebinthinæ Stockes), 3 Oil in 10; not in the others.)

UNGUENTUM TEREBINTHINÆ.

Oil of Turpentine, 1 oz.; Resin, in powder, 54 grs.; Yellow Wax, ½ oz.; Prepared Lard, ½ oz.: melt the ingredients together over a water bath, remove the vessel and stir till cold. =(1 in 2⅛).

(Dan., Dutch, Fr., Ger., Norw., Port., Russ., Swed., and Swiss, differ from this in composition; not in the others.)

Not Official.

THALLINÆ SULPHAS.

The Sulphate of a synthetically-prepared base derived from Chinoline, the full name of which is Tetrahydroparaquinanisol.

A yellowish-white crystalline powder, with an odour resembling that of Coumarin, and an aromatic bitter taste. Its dilute aqueous solution gives a green colour with Ferric Chloride.

Solubility.—1 in 7 of Water.

Medicinal Properties.—Antipyretic and antiseptic. Recommended internally in typhoid fever, and locally for gonorrhœa.

Dose.—3 to 8 grains.

References.—*L.* '84, ii. 1018; *L.M.R.* '85, 456.

For gonorrhœa, an **injection** 2½ grains in 150 minims of Water; a **bougie** 2 grs. in 40 grs. of Cacao Butter.—*B.M.J.* '87, ii. 1438; *L.M.R.* '87, 162.

Adverse results in gonorrhœa.—*B.M.J.* '89, i. 1458.

THEOBROMATIS OLEUM.

OIL OF THEOBROMA.

Syn. Cacao Butter.

A concrete oil, obtained by expression and heat from the ground seeds of *Theobroma Cacao.*

(Austr., Belg., Dan., Dutch, Ger., Hung., Norw., Russ., Swed., and Swiss. Oleum Cacao; Fr., Beurre de Cacao; Port., Oleo de Cacao; Span., Aceite de Cacao; U.S., Oleum Theobromæ.)

Occurs in cakes of a yellowish colour and of a pleasant odour resembling chocolate. Does not become rancid from exposure to air. Melts between 86° and 95° F. (30° and 35° C.). *Brit. Ph.*

Contained in several of the suppositories.

Not Official.

The following form good bases for suppositories:—

Theobroma Oil, when melted, begins to solidify at . .	72° F.
Stearine of Cocoa-nut Oil ,, ,, ,, ,, . .	75° F.
4 of Stearine and 2 Mutton Fat ,, ,, ,, . .	77° F.
4 of Stearine and 1 Spermaceti ,, ,, ,, . .	80° F.

Stearine alone is perhaps a better substance than Cacao Butter for making suppositories. It begins to solidify at 78° F., but there is Stearine that solidifies at 120° F.; this will not answer for suppositories.

THERIACA.

TREACLE.

Syn. SACCHARI FÆX, *Lond.*

The uncrystallizable residue from the refining of Sugar. Golden Syrup of Commerce. Golden brown.

Sp. g. about 1·40.

Test.—Free from empyreumatic odour or flavour.

(Not in the other Pharmacopœias.)

Medicinal Properties.—Demulcent, nutrient, and slightly laxative. A favourite condiment in pharmacy, chiefly employed to make pills, for which, on account of its retentiveness of moisture, it is well adapted.

Contained in several of the Pilula and in Tinctura Chloroformi et Morphinæ.

THUS AMERICANUM.

COMMON FRANKINCENSE.

The concrete Turpentine which is scraped off the trunks of the Swamp Pine, *P. palustris*, and the Frankincense Pine, *Pinus Tæda*.

From the Southern States of North America.

When fresh, it is a softish bright yellow opaque solid, resinous but tough, having the odour of crude American turpentine, but by keeping it becomes dry and brittle, darker in colour and of a milder odour.

Solubility.—Almost wholly soluble 1 in 1 of Rectified Spirit; entirely 4 in 3 of Ether.

The true Thus is *Pix Burgundica*, from the Spruce Fir, *Abies excelsa*. *See* PIX BURGUNDICA, page 316.

Medicinal Properties.—Used externally as a stimulant.

Used in the preparation of Emplastrum Picis.

THYMOL.

THYMOL.

$C_{10}H_{13}HO$.

A stearoptene obtained from the volatile oils of *Thymus vulgaris*, *Monarda punctata*, and *Carum Ajowan*, by saponifying with Caustic Soda and treating the separated Soap with Hydrochloric Acid. It may also be obtained from the less volatile fraction of the oil by exposure at a low temperature. It is purified by recrystallization from Alcohol.

Colourless, transparent crystals, with an aromatic odour.

Solubility.—1 in 1500 of Water; 1 in 190 of Glycerine; 8 in 3 of Rectified Spirit or Ether; 8 in 5 of Chloroform; 1 in 6 of Benzin; 1 in 3 of Oil of Turpentine; 1 in 2 of Olive Oil; 4 in 3 of Glacial Acetic Acid; 1 in 6 of Solution of Potash.

(Austr., Ger. and Hung., Thymolum; Dutch, Fr. and U.S., Thymol; Russ., Acidum Thymicum; Span., Timol; not in the others.)

Medicinal Properties.—A saturated solution in Water is a very powerful antiseptic; it arrests fermentation in a solution of Sugar and Yeast better than either Carbolic Acid or Salicylic Acid, and it also arrests putrefaction of animal matters.—*B.M.J.* '75, i. 680.

It is a very powerful deodorant.

Not Official.

LIQUOR THYMOLIS.—Thymol, 1; Rectified Spirit, 100. This solution is very useful, as it may be diluted to any extent with water without precipitation. Half a pint diluted to a gallon is about the same strength as a saturated aqueous solution.

THYMOL ANTISEPTIC DRESSINGS.—**Gauze**, 5 p.c., and **Wool**, 5 p.c.

VAPOR THYMOLIS (*T.H.*).—Thymol, 6 grs.; Rectified Spirit, 60 mins.; Light Carbonate of Magnesia, 3 grs. Water to 1 oz.; mix.

A teaspoonful in a pint of Water at 140° F. for each inhalation.

A strong stimulant and disinfectant.

TINCTURÆ.

TINCTURES.

Many of these have been directed by the British Pharmacopœia to be made by percolation, and as this operation imposes several conditions to be complied with in order that it may be efficiently performed, directions on the subject will be found immediately after the group of Tinctures.

The following are the Tinctures of the British Pharmacopœia, the formulas for which will be found under the names of the drugs from which they are prepared; all are made with Proof Spirit unless otherwise stated.

Dose.		Proportion of ingredient.	
5 to 15 min.	TINCTURA ACONITI	1 in 8.	Rect. Sp.
1 to 2 drm.	TINCTURA ALOES	1 in 40.	
½ to 1 drm.	TINCTURA ARNICÆ	1 in 20.	Rect. Sp.
½ to 1 drm.	TINCTURA ASAFŒTIDÆ	1 in 8.	Rect. Sp.
1 to 2 drm.	TINCTURA AURANTII	1 in 10.	
1 to 2 drm.	TINCTURA AURANTII RECENTIS	3 in 10.	Rect. Sp.
5 to 20 min.	TINCTURA BELLADONNÆ	1 in 20.	
½ to 1 drm.	TINCTURA BENZOINI COMP.	1 in 10.	Rect. Sp.
1 to 2 drm.	TINCTURA BUCHU	1 in 8.	
½ to 2 drm.	TINCTURA CALUMBÆ	1 in 8.	
15 to 60 min.	TINCTURA CAMPHORÆ COMPOSITA. Opium 1, Benzoic Acid 1, Camphor ¾, in 240.		
5 to 20 min.	TINCTURA CANNABIS INDICÆ (Extract)	1 in 20.	Rect. Sp.
5 to 20 min.	TINCTURA CANTHARIDIS	1 in 80.	
10 to 20 min.	TINCTURA CAPSICI	1 in 27.	Rect. Sp.
½ to 2 drm.	TINCTURA CARDAMOMI COMP.	1 in 80.	
½ to 2 drm.	TINCTURA CASCARILLÆ	1 in 8.	
½ to 2 drm.	TINCTURA CATECHU	1 in 8.	
½ to 2 drm.	TINCTURA CHIRATÆ	1 in 8.	
20 to 60 min.	TINCTURA CHLOROFORMI COMP.	1 in 10.	Rect. Sp.
5 to 10 min.	TINCTURA CHLOROFORMI ET MORPHINÆ.		
15 to 60 min.	TINCTURA CIMICIFUGÆ	1 in 8.	
½ to 2 drm.	TINCTURA CINCHONÆ	1 in 5.	
½ to 2 drm.	TINCTURA CINCHONÆ COMP.	1 in 10.	
½ to 2 drm.	TINCTURA CINNAMOMI	1 in 8.	Rect. Sp.
30 min.	TINCTURA COCCI	1 in 8.	

Dose.		Proportion of ingredient.	
10 to 30 min.	TINCTURA COLCHICI SEMINUM	1 in 8.	
20 to 60 min.	TINCTURA CONII (Fruit)	1 in 8.	
½ drm.	TINCTURA CROCI	1 in 20.	
½ to 2 drm.	TINCTURA CUBEBÆ	1 in 8.	Rect. Sp.
10 to 30 min.	TINCTURA DIGITALIS	1 in 8.	
5 to 30 min.	TINCTURA ERGOTÆ	1 in 4	
5 to 30 min.	TINCTURA FERRI ACETATIS (Liquor)	1 in 4.	Rect. Sp. and Water.
10 to 30 min.	TINCT. FERRI PERCHLORIDI (Liquor)	1 in 4.	
½ to 2 drm.	TINCTURA GALLÆ	1 in 8.	
5 to 20 min.	TINCTURA GELSEMII	1 in 8.	
½ to 2 drm.	TINCTURA GENTIANÆ COMP.	1 in 13⅓.	
½ to 1 drm.	TINCTURA GUAIACI AMMONIATA	1 in 5.	Arom. Sp. Ammon.
½ to 1 drm.	TINCTURA HYOSCYAMI	1 in 8.	
5 to 20 min.	TINCTURA IODI. Iodine 1, Iodide Potass.	1 in 40.	Rect. Sp.
½ to 1 drm.	TINCTURA JABORANDI	1 in 4.	
½ to 2 drm.	TINCTURA JALAPÆ	1 in 8.	
½ to 2 drm.	TINCTURA KINO	1 in 10.	Rect. Sp. and Water.
½ to 2 drm.	TINCTURA KRAMERIÆ	1 in 8.	
20 to 30 min.	TINCTURA LARICIS	1 in 8.	Rect. Sp.
½ to 2 drm.	TINCTURA LAVANDULÆ COMP. (Oil).	1 in 213.	Rect. Sp.
½ to 2 drm.	TINCTURA LIMONIS	1 in 8.	
10 to 30 min.	TINCTURA LOBELIÆ	1 in 8.	
10 to 30 min.	TINCTURA LOBELIÆ ÆTHEREA	1 in 8.	Sp. Ether.
½ to 2 drm.	TINCTURA LUPULI	1 in 8.	
½ to 1 drm.	TINCTURA MYRRHÆ	1 in 8.	Rect. Sp.
10 to 20 min.	TINCTURA NUCIS VOMICÆ	1 gr. of Alkaloids in 1 oz.	Rect. Sp. & Water.
5 to 40 min.	TINCTURA OPII	1 in 13⅓.	
½ to 1 drm.	TINCTURA OPII AMMONIATA	1 gr. in 96 mins.	Rect. Sp.
15 to 60 min.	TINCTURA PODOPHYLLI	1 in 55.	Rect. Sp.
	TINCTURA PYRETHRI	1 in 5.	Rect. Sp.
½ to 2 drm.	TINCTURA QUASSIÆ	1 in 27.	
½ to 2 drm.	TINCTURA QUININÆ	1 gr. in 60 min.	Tr. Orange.
½ to 2 drm.	TINCTURA QUININÆ AMMONIATA	1 gr. in 60 mins.	
1 dr. to 1 oz.	TINCTURA RHEI	1 in 10.	
20 to 60 min.	TINCTURA SABINÆ	1 in 8.	
10 to 30 min.	TINCTURA SCILLÆ	1 in 8.	
½ to 2 drm.	TINCTURA SENEGÆ	1 in 8.	
1 to 4 drm.	TINCTURA SENNÆ	1 in 8.	
½ to 2 drm.	TINCTURA SERPENTARIÆ	1 in 8.	
10 to 30 min.	TINCTURA STRAMONII	1 in 8.	
10 to 30 min.	TINCTURA SUMBUL	1 in 8.	Rect. Sp.
20 to 40 min.	TINCTURA TOLUTANA—*See* BALSAM	1 in 8.	Rect. Sp.
1 to 2 drm.	TINCTURA VALERIANÆ	1 in 8.	
½ to 1 drm.	TINCTURA VALERIANÆ AMMONIATA	1 in 8.	Arom. Sp. Ammon.
5 to 20 min.	TINCTURA VERATRI VIRIDIS	1 in 5.	Rect. Sp.
15 to 60 min.	TINCTURA ZINGIBERIS	1 in 8.	Rect. Sp.
5 to 20 min.	TINCTURA ZINGIBERIS FORTIOR	1 in 2.	Rect. Sp.

Tinctures that are not official are enumerated in the Index.

DIRECTIONS FOR PERCOLATING TINCTURES.

After the materials have been macerated for forty-eight hours in three-fourths of the menstruum ordered, percolation will be most efficiently performed by decanting the liquid, pressing the ingredients in the hand, and carefully packing them, in small portions at a time, in a percolator, so that the mass shall be uniformly tight throughout. The decanted liquid may then be poured upon the ingredients and allowed to percolate; the remainder of the menstruum being afterwards poured upon them in order to displace the strong tincture. As soon as the liquid ceases to drop, the ingredients are to be removed and pressed. Any deficiency in the product may be made up by adding more of the menstruum and repeating the pressure.

When practicable, a better method than the above process of maceration and washing, is to thoroughly damp the materials with some of the spirit, and after 24 hours, pack them in the percolator (a shape more cylindrical than conical is best), and pass the remainder of the spirit slowly through the materials, regulating the outflow so that the top shall not become dry as long as any spirit remains to go on. Finally drain, and press.

In the case of Tr. Card. Co. the materials should be rubbed together in a mortar and packed without spirit; while with Myrrh, percolation is impossible without previous maceration.

TRAGACANTHA.

TRAGACANTH.

A gummy exudation obtained from incisions made in the stem of *Astragalus gummifer*, and some other species of Astragalus.

Collected in Asia Minor. Nearly white.

Solubility.—Sparingly soluble in cold water.

Tests.—After maceration in cold water, the fluid portion is not precipitated by the addition of Rectified Spirit—indicating absence of Acacia Gum; and the gelatinous mass, when boiled and cooled, is not turned blue by Tincture of Iodine—indicating absence of Starch.

Pure Tragacanth does give a blue colouration with Iodine, varying in depth in different samples, but in any case it is much too faint to be confounded with added Starch.

(Belg., Dan., Dutch, Fr., Ger., Hung., Norw., Russ., Swed., Swiss, and U.S.; Port., Gomma Adragantha; Span., Tragacanto; not in Austr.)

Medicinal Properties.—Demulcent. Used for the suspension of heavy insoluble powders in liquids; the compound powder equal to the weight of the powder itself may be used.

Dose.—Of the powder, 20 grs. or more.

Preparations.

GLYCERINUM TRAGACANTHÆ.

Tragacanth, in powder, 110 grs.; Glycerine, 1 oz.; Distilled Water, 74 grs: mix the Tragacanth and Glycerine, add the Water, and rub until a translucent homogeneous jelly is formed.

(Not in the other Pharmacopœias.)

MUCILAGO TRAGACANTHÆ.

Tragacanth, in powder, 60 grs.; Distilled Water, 10 oz.:

Rectified Spirit, 2 fl. drs.: mix the Tragacanth with the spirit, then pour in the Water with constant agitation. =(1 in 70).

Now contains Rectified Spirit.

Dose.—1 oz.

(Belg. 1 in 83; Dutch, 1 in 50; Fr., Mucilage de Gomme Adragante, 1 in 10; Port., 1 in 10 and 1 in 100; Russ., Tragacanth 4, Acacia 1, Water 480; U.S., 1 in 16⅔ with Glycerine; not in the others.)

One part of Tragacanth gives more viscosity to water than 25 parts of Gum Arabic.

A good excipient for pills is, Tragacanth in powder, 1; Glycerine, 6; rub together and keep for two or three days before use to allow it to stiffen.

PULVIS TRAGACANTHÆ COMPOSITUS.

Tragacanth in powder, 1; Gum Acacia in powder, 1; Starch in powder, 1; Refined Sugar in powder, 3: rub well together. =(1 in 6).

Dose.—10 to 60 grs.

(Not in the other Pharmacopœias.)

Not Official.

TRIFOLIUM.

CLOVER.

A **fluid extract** is made from the dried plant, and from this a **syrup**, a teaspoonful of which 3 or 4 times a day is serviceable in Whooping Cough.

Not Official.

TRITICUM.

CREEPING COUCH GRASS.

The rhizome of *Triticum repens*, gathered in the spring, and deprived of the rootlets.

(Austr., Belg., Dan., Dutch, Ger., Russ., and Swiss, Rhizoma Graminis; Fr. Chien-dent; Port., Grama Franceza: U.S., Triticum; not in the others.)

Preparations.

DECOCTUM TRITICI.—Root, 1 oz., Water, 20 oz.: boil ten minutes, and strain when cold.

Dose.—4 to 8 oz. three times a day for mucous discharge from the bladder.

(Fr. Tisane 1 in 50.)

EXTRACTUM TRITICI LIQUIDUM (*B.P.C.*).—Triticum in No. 20 powder, 10; percolate with water until exhausted; evaporate the percolate to 15, and add 5 of Rectified Spirit; set aside for 48 hours, filter, and make up to 20 with a mixture of Water 3 and Rectified Spirit 1.

Dose.—1 to 6 drms.

TROCHISCI.

LOZENGES.

The following are the Lozenges of the British Pharmacopœia:—

		Quantity of the active ingredient contained in each lozenge.
TROCHISCI ACIDI BENZOICI		½ grain.
TROCHISCI ACIDI TANNICI		½ grain.
TROCHISCI BISMUTHI	(Subnitrate)	2 grains.
TROCHISCI CATECHU		1 grain.
TROCHISCI FERRI REDACTI		1 grain.
TROCHISCI IPECACUANHÆ		¼ grain.
TROCHISCI MORPHINÆ	(Hydrochlorate)	$\frac{1}{36}$ grain.
TROCHISCI MORPHINÆ ET IPECAC.	„	$\frac{1}{36}$ and $\frac{1}{12}$ gr. Ipecac.

		Quantity of the active ingredient contained in each lozenge.
TROCHISCI OPII	(Extract)	$\frac{1}{10}$ grain.
TROCHISCI POTASSII CHLORATIS . . .		5 grains.
TROCHISCI SANTONINI		1 grain.
TROCHISCI SODII BICARBONATIS . . .		5 grains.

Lozenges that are not official are enumerated in the Index.

Black currant paste is a most convenient substance for making Lozenges of any special drug.

Not Official.

ULEXINE.

An alkaloid prepared from *Ulex Europæus*, the common gorse or furze.

Solubility.—Freely Soluble in Water and Chloroform; insoluble in Pure Ether.

The Nitrate, Hydrochlorate, and Hydrobromate are crystalline Salts.

Medicinal Properties.—Diuretic; useful in cases of dropsy due to heart disease.

Dose.—$\frac{1}{20}$ to $\frac{1}{15}$ grain dissolved in 60 minims of Water.

References.—*P.J.* xvii. 101, 229; *P.J.* xix. 1029; *L.* '86, ii. 645; *L.* '87, ii. 691; *L.* '88, i. 241.

Ulexine temporarily masks the action of Strychnine.—*T.G.* '87, 280, 690.

Not Official.

ULMUS.

The dried inner bark of *Ulmus campestris*, deprived of its outer layer.

Fr., Orme Champêtre and O. Fauve; Port., Olmo; U.S., Ulmus Fulva, Slippery Elm.)

Medicinal Properties.—Bitter, demulcent, slightly tonic, astringent and diuretic.

Preparation.

DECOCTUM ULMI.—Elm Bark cut small, 1; Distilled Water, 8; boil 10 minutes, strain and make up to 8.

Dose.—2 to 4 ounces, three or four times daily.

(U.S., Mucilago Ulmi, 6 of Slippery Elm in 100; not in the others.)

UNGUENTA.

OINTMENTS.

The following are the Ointments of the British Pharmacopœia, the formulas for which will be found under the names of the drugs from which they are prepared:—

		Proportion of active ingredients in the mass.
UNGUENTUM ACIDI BORICI		1 in 7.
UNGUENTUM ACIDI CARBOLICI		1 in 19.
UNGUENTUM ACIDI SALICYLICI		1 in 28.
UNGUENTUM ACONITINÆ		1 in 60.
UNGUENTUM ANTIMONII TARTARATI		1 in 5.
UNGUENTUM ATROPINÆ		1 in 60.
UNGUENTUM BELLADONNÆ	(Extract)	1 in 10.
UNGUENTUM CALAMINÆ		1 in 6.
UNGUENTUM CANTHARIDIS	about	1 in 7.
UNGUENTUM CETACEI		1 in $5\frac{1}{2}$.

		Proportion of active ingredients in the mass.
UNGUENTUM CHRYSAROBINI		1 in 25.
UNGUENTUM CREASOTI		1 in 9.
UNGUENTUM ELEMI		1 in 5.
UNGUENTUM EUCALYPTI		1 in 5.
UNGUENTUM GALLÆ		1 in 6½.
UNGUENTUM GALLÆ CUM OPIO	(Opium)	1 in 14½.
UNGUENTUM GLYCERINI PLUMBI SUBACETATIS		1 in 6⅓.
UNGUENTUM HYDRARGYRI	(Mercury)	1 in 2.
UNGUENTUM HYDRARGYRI AMMONIATI		1 in 10.
UNGUENTUM HYDRARGYRI COMPOSITUM	(Mercury)	1 in 4½.
UNGUENTUM HYDRARGYRI IODIDI RUBRI		1 in 28.
UNGUENTUM HYDRARGYRI NITRATIS	(Mercury)	1 in 15½.
UNGUENTUM HYDRARGYRI NITRATIS DILUTUM		1 in 3.
UNGUENTUM HYDRARGYRI OXIDI RUBRI		1 in 8.
UNGUENTUM HYDRARGYRI SUBCHLORIDI		1 in 6½.
UNGUENTUM IODI	(Iodine)	1 in 31.
UNGUENTUM IODOFORMI		1 in 10.
UNGUENTUM PICIS LIQUIDÆ		5 in 7.
UNGUENTUM PLUMBI ACETATIS		1 in 37½.
UNGUENTUM PLUMBI CARBONATIS		1 in 8.
UNGUENTUM PLUMBI IODIDI		1 in 8.
UNGUENTUM POTASSÆ SULPHURATÆ		1 in 15½.
UNGUENTUM POTASSII IODIDI	about	1 in 8¾.
UNGUENTUM RESINÆ		1 in 3¾.
UNGUENTUM SABINÆ	about	1 in 2.
UNGUENTUM SIMPLEX.		
UNGUENTUM STAPHISAGRIÆ	about	1 in 2¼.
UNGUENTUM SULPHURIS		1 in 5.
UNGUENTUM SULPHURIS IODIDI		1 in 15½.
UNGUENTUM TEREBINTHINÆ	(Oil)	1 in 2⅛.
UNGUENTUM VERATRINÆ		1 in 63.
UNGUENTUM ZINCI		1 in 6½.
UNGUENTUM ZINCI OLEATI		1 in 2.

Ointments which are not official are enumerated in the Index.

Not Official.

URETHANE.

$C_3H_7NO_2$.

The Ethylic Ether of Carbaminic Acid.

In colourless, prismatic crystals, with a peculiar cooling taste; free from odour. Melts at 48° to 50° C.

Solubility.—1 in 2 of Water; 1 in 1 of Rectified Spirit; 2 in 3 of Ether.
(Not in the foreign Pharmacopœias.)

Medicinal Properties.—A pure hypnotic; has no anodyne properties.

Dose.—15 to 30 grs.

REFERENCES.—*B.M.J.* '85, ii. 611; *B.M.J.* '86, i. 343, 354; *B.M.J.* '86, ii. 108, 468; *T.G.* '88, 340.

An antidote to Strychnia.—*B.M.J.* '86, ii. 176.

SOMNAL.—Ethylated Chloral-urethan, $C_{17}H_{12}Cl_3O_3N$. Melts at 42°C.
Hypnotic.—*L.* '89, ii. 1024.
Dose.—30 grains.

UVÆ.

RAISINS.

The ripe fruit of the Grape Vine, *Vitis vinifera*, dried in the sun or with artificial heat. Imported from Spain.

(Fr. Raisin; not in the other Pharmacopœias.)

Medicinal Properties.—Nutritious and demulcent. Principally used as a flavouring agent.

Contained in Tinct. Cardam. Comp., and Tinct. Sennæ.

UVÆ URSI FOLIA.

BEARBERRY LEAVES.

The dried leaves of *Arctostaphylos Uva-ursi*, from indigenous plants.

Contains a crystallizable glucoside, **Arbutin**, soluble in Water and Rectified Spirit.

(Austr., Belg., Dan., Dutch, Fr. (Busserole), Ger., Norw., Port. (Uva Ursina), Russ., Span. (Gayuba), Swed., Swiss, and U.S.; not in Hung.)

Medicinal Properties.—Astringent and tonic, with a direct influence on the kidneys and urinary organs.

Dose.—Of the powdered leaf, 10 to 30 grs.

Preparation.

INFUSUM UVÆ URSI.

Bearberry Leaves, bruised, 1; boiling Distilled Water, 20: infuse one hour, and strain. =(1 in 20).

Dose.—1 to 2 oz.

In the 1864 Pharmacopœia the leaves were not ordered to be bruised; *when bruised*, the infusion is stronger, but a large deposit forms from the strained fluid.

(Fr. (Tisane), 1 in 100; not in the other Pharmacopœias.)

Incompatibles.—Iron Salts, Lead Salts, Nitrate of Silver, Vegetable Alkaloids, Gelatine.

VALERIANÆ RHIZOMA.

VALERIAN RHIZOME.

The rhizome and rootlets of *Valeriana officinalis*, indigenous and cultivated in Britain, collected in autumn and dried; that from wild plants growing on dry soil is preferred. It owes its properties to a volatile oil and a volatile acid, the Salts of which (Valerianates) are not prepared from the root, but synthetically from Amylic Alcohol.

(In all the Pharmacopœias.)

Medicinal Properties.—It is a nervous stimulant and antispasmodic. Useful in hysteria and nervous diseases; also in chorea and epilepsy; and as an adjunct to tonics.

Dose.—10 to 30 grs. of the powder.

Preparations.

INFUSUM VALERIANÆ.

Valerian Rhizome, bruised, ¼ oz.; boiling Distilled Water, 10 oz.: infuse one hour, and strain. =(about 1 in 40).

Dose.—1 to 2 oz.

(Fr. Tisane, 1 in 100; Span., 1 in 138; not in the other Pharmacopœias.)

TINCTURA VALERIANÆ.

Valerian Rhizome, in No 40 powder, 1; Proof Spirit, 8: macerate the Valerian forty-eight hours with 6 of the spirit, agitating occasionally; pack in a percolator, let it drain, pour on the remainder of the spirit; when it ceases to drop, press and filter, and add Proof Spirit to make 8. =(1 in 8).

Dose.—1 to 2 drms.

(Austr., Belg., Dan., Dutch, Fr., Ger., Norw., Port., Russ., Span., and Swiss, 1 and 5; Hung. and U.S. 1 in 5; all by weight.)

TINCTURA VALERIANÆ AMMONIATA.

Valerian Rhizome, in No. 40 powder, 1; Aromatic Spirit of Ammonia, 8: macerate the Valerian seven days, strain, press, filter, and add Aromatic Spirit of Ammonia to make 8. =(1 in 8).

The formula for Aromatic Spirit of Ammonia has been altered.

Dose.—$\frac{1}{2}$ to 1 drm.

(Port and Swiss, 1 and 5; U.S. 1 in 5; not in the other Pharmacopœias.)

Not Official.

TINCTURA VALERIANÆ ÆTHEREA.

(Belg., Dan., Ger., Hung., Norw., Span., Swed., and Swiss, Valerian 1, Spirit of Ether 5; Fr., Powdered Valerian 1, Ether (sp. g. ·758) 5, by percolation; Russ., Valerian 1, Alcohol (90°) 4, Ether (·728) 2; all by weight.)

OLEUM VALERIANÆ.—A yellow volatile Oil; sp. g. ·930—·960.

(Austr., Belg., Dutch, Hung., Port., Russ., Swed., Swiss, and U.S.)

VAPORES.

INHALATIONS.

VAPOR ACIDI HYDROCYANICI, 10 to 15 minims, and 1 drm. cold Water.

VAPOR CHLORI, Chlorinated Lime, 2 oz.; cold Water, a sufficiency.

VAPOR CONINÆ, Juice of Hemlock, $\frac{1}{2}$ oz.; Solution of Potash, 60 mins.; Water, 1 oz.: of this mixture use 20 minims and hot Water.

VAPOR CREASOTI, 12 minims, in 8 oz. boiling Water.

VAPOR IODI, Tincture of Iodine, 60 mins.; Water, 1 oz.: apply a gentle heat.

VAPOR PINI SYLVESTRIS, 5 minims; Light Carbonate of Magnesium $2\frac{1}{2}$ grs.; Water, 60 mins.

VERATRINA.

VERATRINE.

An alkaloid, or mixture of alkaloids, obtained from Cevadilla, not quite pure.

The nomenclature of the alkaloids contained in this mixture has undergone modification. Wright and Luff assign to the crystallizable portion (called by Merck "Veratrine") the name of **Cevadine**, as it yields on saponification Cevadic Acid, the name **Veratrine** being reserved for the base described by Couerbe, which yields Veratric Acid. Another base has been called **Cevadilline**, but the bulk of the alkaloid refuses to yield any crystallizable or otherwise definable compounds.

Pale grey, amorphous, pulverulent masses, powerfully irritating the nostrils, strongly and persistently bitter, and highly acrid and poisonous.

Tests.—Concentrated Sulphuric Acid forms a deep-red solution, which exhibits a green fluorescence by reflected light. Warmed with Hydrochloric Acid, it dissolves with the production of a blood-red colour. Leaves no residue on ignition.

Solubility.—Scarcely soluble in cold water; 1 in 1000 of boiling water; 1 in 3 of Rectified Spirit; 1 in 6 of Ether; 1 in 3 of Chloroform; sparingly in Glycerine; about 1 in 80 of Olive Oil; and readily in diluted acids.

(In all the Pharmacopœias.)

Medicinal Properties.—A powerful emetic and drastic purgative. Rarely given internally. Used externally in neuralgia, in chronic swellings, stiffening or induration of the joints. It should not be used where the skin is broken.

Preparation.

UNGUENTUM VERATRINÆ.

Veratrine, 8 grs. ; Hard Paraffin, $\frac{1}{4}$ oz. ; Soft Paraffin, $\frac{3}{4}$ oz. ; Olive Oil, 60 mins. : rub the Veratrine and the Oil together ; melt the Hard and Soft Paraffins together, and when in cooling they begin to thicken, mix the whole thoroughly in a mortar until cold. =(7 grs. in the oz.).

Now made with the Paraffins in place of Lard.

(U.S. 1 in 25 ; Russ. 1 in 90 ; Port. (Pomada), 1 in 50 ; not in the others.)

Antidotes.—Emetic, stimulants, Coffee, warmth to the extremities. Recumbent position to be strictly maintained.—(*Murrell.*)

Not Official.

OLEATUM VERATRINÆ (U.S.).—Veratrine, 2 ; Oleic Acid, 98 ; rub together, and heat on a water-bath until dissolved.

Squibb suggests that this should be made 10 per cent., as more likely to give relief in neuralgia.—*Ephemeris*, p. 164.

VERATRI VIRIDIS RHIZOMA.

GREEN HELLEBORE RHIZOME.

The rhizome and rootlets of *Veratrum viride*, dried.

Collected in autumn in U.S. and Canada.

The principal alkaloidal constituent is **Cevadine,** the same base as is found in Cevadilla.

(U.S. ; not in the other Pharmacopœias.)

Medicinal Properties.—Has been given to reduce arterial excitement in sthenic forms of fever, and to quiet spinal spasms ; should be cautiously prescribed.

In cardiac hypertrophy with dropsy,—*L.* '87, i. 951.

(U.S. ; not in the other Pharmacopœias.)

Preparation.

TINCTURA VERATRI VIRIDIS.

Green Hellebore Rhizome, in No. 40 powder, 4 ; Rectified Spirit, 20 : macerate the powder with 15 of the spirit forty-eight hours, agitating occasionally, pack it in a percolator, let it drain, pour on the remainder of the spirit ; when it ceases to drop, press, filter, and add Rectified Spirit to make 20. =(1 in 5).

Dose.—5 to 20 minims.

(U.S., American Hellebore, 1 in 2 ; not in the other Pharmacopœias.)

Not Official.

VIBURNUM.

BLACK HAW.

The bark of *Viburnum prunifolium.*

(U.S. ; not in the others.)

Medicinal Properties.—Sedative and tonic to the uterine nervous system. Recommended in cases of threatened abortion.

REFERENCES.—*B.M.J.* '85, i. 987 ; *B.M.J.* '86, i. 489, 542, 641, 740, 973 ; *B.M.J.* '87, i. 1153.

Preparation.

EXTRACTUM VIBURNI FLUIDUM (U.S.).—Exhaust by percolation Viburnum (in No. 60 powder), 100 parts, with a mixture of Alcohol (90°) 2 and Water 1 (by weight); reserve the first 85, and evaporate the remainder to a soft extract; dissolve this in the reserved portion, and add enough menstruum to measure 100.

VINA.

WINES.

Medicated Wines are of very ancient date, and were admitted into our earliest Pharmacopœias. Two only remain as representatives of the old Pharmacopœias—Vinum Antimonii and V. Ferri; the former was prepared by digesting 4 ounces of the Regulus of Antimony in powder with 3 pounds of "White" Wine (Pharmacopœia Londinensis, 1655). The latter (Vinum Chalybeatum) was made with Rhenish Wine and iron filings.

The following are the Wines of the British Pharmacopœia, the formulas for which will be found under the names of the drugs from which they are prepared:—

Dose.		Proportion of active ingredient in the whole.
60 mins.	VINUM ALOES	1 in $26\frac{2}{3}$.
15 mins.	VINUM ANTIMONIALE	2 grs. to 1 oz.
	VINUM AURANTII	
20 mins.	VINUM COLCHICI	(Corm) 1 in 5.
60 mins.	VINUM FERRI	made with Iron Wire.
60 mins.	VINUM FERRI CITRATIS	8 grs. to 1 oz.
5 mins.	VINUM IPECACUANHÆ	1 in 20.
15 mins.	VINUM OPII	Ext. Opium 1 in 20.
$\frac{1}{2}$ oz.	VINUM QUININÆ	1 gr. in 1 oz.
60 mins.	VINUM RHEI	1 in $13\frac{1}{3}$.
	VINUM XERICUM.	

VINUM XERICUM.

SHERRY.

A pale brown Spanish Wine, containing about seventeen per cent. of Alcohol. Unless good sound Sherry is used, the preparations are apt to spoil by keeping.

All Medicinal Wines are made with Sherry, except Vin. Ferri Citratis and Vinum Quininæ, which are made with British Orange Wine.

For the amount of Alcohol in the several wines most commonly drunk in England, *see* "Spiritus."

Not Official.

VINCA MAJOR.

GREAT PERIWINKLE.

An **infusion** made of 2 oz. of dried herb to 20 oz. boiling water, and strained when cold, is powerfully astringent.

Dose.—A wineglassful drunk as frequently as required will arrest menorrhagia when other remedies have failed.

(Fr., Pervenche Grande; not in the others.)

EXT. VINCÆ MAJORIS LIQUIDUM.—Made from the expressed juice of the plant of such strength that $1\frac{1}{2}$ drms. are equal to 2 oz. of the infusion.

Dose.—1 to 2 drms. in water.

The Fluid Extract keeps well, and is the best to prescribe.

Not Official.

YERBA SANTA.

The leaves of *Eriodictyon Californicum.*

They contain 30 to 40 p.c. of a gum resin.

Recommended in acute bronchitis.—*L.M.R.* '82, 47.

A **fluid extract**, 1 in 1, made with strong Alcohol, the dose of which is 10 to 60 minims.

ZINCUM.

ZINC.

Zn, eq. 65.

Sp. g. 7·1; fuses at 773° F. A bluish-white metal, of peculiar taste and of a perceptible smell when rubbed; laminated, and with a crystalline fracture.

It occurs native, as a Sulphide or as a Carbonate, and is separated from impurities by sublimation.

ZINCUM GRANULATUM.

GRANULATED ZINC.

Fuse Zinc of Commerce in an earthen crucible, heated to a sufficient degree to melt the Zinc, but not to produce combustion; pour it in a very thin stream into a bucket of cold water; afterwards dry the Zinc.

Used to prepare Liquor Zinci Chloridi, Zinci Chloridum, Zinci Sulphas.

The British Pharmacopœia contains the following preparations of Zinc:—

ZINCI ACETAS.
ZINCI CARBONAS.
ZINCI CHLORIDUM.
ZINCI OXIDUM.
ZINCI SULPHAS.
ZINCI SULPHOCARBOLAS.
ZINCI VALERIANAS.

Incompatibles of Zinc Salts are—Alkalies and their Carbonates, Lime Water, Astringent Vegetable Infusions or Decoctions, and Milk.

Antidotes.—In case of poisoning with the Salts of Zinc, Carbonate of Sodium or Carbonate of Potassium in large quantities dissolved in warm water, Milk and Eggs freely, Tannic Acid or Strong Tea, Laudanum, Linseed Meal Poultices to abdomen. If much pain in the abdomen, an enema of gruel, or starch and water may be given. (Murrell.)

ZINCI ACETAS.

ACETATE OF ZINC.

$Zn(C_2H_3O_2)_2 . 2H_2O$, eq. 219.

Thin, translucent, and colourless crystalline plates, of pearly lustre.

Solubility.—10 in 25 of Water; 4 in 1 of boiling Water; 1 in 40 of Rectified Spirit; 1 in 3 of boiling Rectified Spirit.

Tests.—A dilute watery solution is not affected by Chloride of Barium or by Nitrate of Silver (absence of Sulphates and Chlorides); and when slightly acidulated with Hydrochloric Acid is not precipitated by

Sulphuretted Hydrogen (absence of Cadmium and Lead). After it has been boiled for a few minutes with a little Nitric Acid, it yields with Ammonia a white precipitate, entirely soluble without colour in an excess of the reagent (absence of Iron).

(Belg., Dan., Fr., Ger., Hung., Port., Russ., Span., Swiss, and U.S.)

Medicinal Properties.—Astringent. Similar to the Sulphate.

Dose.—1 to 2 grs. as a tonic, 10 to 20 grs. as an emetic.

Not Official.

LOTIO ZINCI ACETATIS.—Acetate of Zinc, 2 grs.; Water, 1 oz.: mix. An astringent collyrium in ophthalmia, or as an injection in gonorrhœa after the acute stage has passed.

Tincture or Wine of Opium causes no precipitate with this Lotion.

Not Official.

ZINCI BROMIDUM.

A whitish granular powder, very deliquescent.

Solubility.—4 in 1 of Water; 2 in 1 of Rectified Spirit.

(Span. and U.S.; not in the other Pharmacopœias.)

Dose.—2 grs. three times a day for epilepsy.

ZINCI CARBONAS.

CARBONATE OF ZINC.

$ZnCO_3(Zn2HO)_2$, H_2O, eq. 341.

The anhydrous normal Carbonate, $ZnCO_3$, occurs native as Calamine. The composition of the precipitated hydrated Carbonate varies much according to the conditions under which it is formed.

A white, tasteless, inodorous powder.

Insoluble in water.

Tests.—Its solution in diluted Nitric Acid is not precipitated by Chloride of Barium (indicating absence of Sulphate), or Nitrate of Silver (absence of Chloride), and gives with Carbonate of Ammonium a white precipitate (Carbonate of Zinc), entirely soluble without colour in an excess of the reagent (absence of Iron).

(Swiss; U.S., Zinci Carbonas Præcipitatus; not in the others.)

Medicinal Properties.—Same as those of Oxide of Zinc.

Dose.—2 to 10 grs.

ZINCI CHLORIDUM.

CHLORIDE OF ZINC.

$ZnCl_2$, eq. 136.

In colourless opaque rods or tablets, very deliquescent and caustic.

Solubility.—10 in 4 of Water; 1 in 1 of Rectified Spirit; freely in Ether; 1 in 4 (nearly) of Glycerine.

Tests.—Its watery solution is not affected by Chloride of Barium (indicating absence of Sulphuric Acid), or by Oxalate of Ammonium (absence of Calcium), and is not tinged blue by the Ferrocyanide or Ferricyanide of Potassium (absence of Iron). Ammonia throws down a white precipitate entirely soluble in an excess of the reagent.

(Austr., Ger., Hung., Russ., and Swiss, Zincum Chloratum; Belg., Chloruretum Zinci; Dan., Norw., and Swed., Chloretum Zincicum; Fr., Chlorure de Zinc; Port., Chloreto do Zinco; Span., Cloruro Zincico; U.S., Zinci Chloridum.)

Medicinal Properties.—Astringent, antiseptic and disinfectant. Seldom given internally. Externally, applied as a caustic to indolent and malignant ulcers alone or mixed with an equal proportion of Flour, Plaster of Paris, or Oxide of Zinc, to prevent its spreading (as it liquefies) beyond the edges of the ulcer. As a **lotion**, 20 grs. to 1 oz. of Water, it is an efficient substitute for Carbolic Acid, in syringing out offensive pus cavities, sinuses, foul ulcers, &c.

Solution for Gaiffe's galvanic apparatus, 60 grs. of Chloride of Zinc to 2 oz. of distilled water, filtered.

Preparation.

LIQUOR ZINCI CHLORIDI.

Granulated Zinc, 8; Hydrochloric Acid, 22; Solution of Chlorine, *q. s.;* Carbonate of Zinc, ¼; Distilled Water, 10. Mix the Acid and Water in a porcelain dish, add the Zinc, and apply a gentle heat to promote the action until gas is no longer evolved; boil for half an hour, supplying the water lost by evaporation, and allow the product to cool. Test a few drops of the resulting liquid for Iron or Lead by adding excess of Ammonia and then Sulphydrate of Ammonium, when a black precipitate is produced if either is present. In the latter case filter the remainder into a bottle, and add solution of Chlorine by degrees, with frequent agitation, until the fluid acquires a permanent odour of Chlorine. Add the Carbonate of Zinc, in small quantities at a time, and with renewed agitation, until a brown sediment appears, and the whole of the Iron or Lead is thus precipitated.

Filter the liquid into a porcelain basin, and evaporate until it is reduced to the bulk of 20. If no Iron or Lead be present, filter and evaporate to 20 at once.

A colourless fluid, with an astringent and sweetish taste. Sp. gr. 1·460.

When finished without loss the above quantities will yield a solution sp. g. about 1·53.

Should answer to the tests of purity for Zinci Chloridum.

(U.S. sp. g. 1·555; not in the other Pharmacopœias.)

(Sir W. Burnett's Disinfecting Solution, sp. g. 2·000.)

Antidotes.—In case of poisoning with Chloride of Zinc, *vide* Zincum, page 420.

Not Official.

CHLORIDE OF ZINC POINTS.—Chloride of Zinc fused and run into conical moulds; preserved in glass tubes.

Darts of Chloride of Zinc have been used in the treatment of Anthrax.—*B.M.J.* '87, ii. 644.

COMPOUND CHLORIDE OF ZINC POINTS.—Chloride of Zinc, 1; Oxide of Zinc, 1; Wheat Flour, 2; Water to make a stiff paste, which is formed into caustic points.

LOTIO ZINCI CHLORIDI (*L.O.H.*).—Chloride of Zinc, 1 gr.; Distilled Water, 1 oz.

PASTA ZINCI CHLORIDI.—Chloride of Zinc and Flour, equal parts; Glycerine, *q.s.*; rub the Chloride of Zinc into a thin paste with Water, then add the Flour; mix well and make into a thick paste with Glycerine.—*London Hosp.*

PASTA ZINCI CHLORIDI CUM OPIO.—Chloride of Zinc Paste, 1 oz.; Extract of Opium, 20 grs.; rub the Extract smooth with a few drops of Water and then mix thoroughly with the Paste.—*London Hosp.*

PULVIS ZINCI CHLORIDI COMP.—Oxide of Zinc, mixed with an equal weight of Chloride of Zinc, will preserve the latter dry enough to blow through a tube into any cavity required, and may be so kept in a bottle for a long time.

Not Official.

ZINCI NITRAS.

Medicinal Properties.—Used as a caustic in the place of Chloride of Zinc, it penetrates deeper and produces less pain.

It can be made into a **paste** in the same way as Chloride of Zinc.

ZINCI OXIDUM.

OXIDE OF ZINC.

ZnO, eq. 81.

A soft, white, tasteless, and inodorous powder. Insoluble in water.

Tests.—Dissolves without effervescence in diluted Nitric Acid, forming a solution which is not affected by Chloride of Barium (absence of Sulphates), or Nitrate of Silver (absence of Chlorides), or diluted Sulphuric Acid (absence of Lead), and gives, with Carbonate of Ammonium, a white precipitate which dissolves entirely without colour in an excess of the reagent.

(In all the Pharmacopœias; Fr. by the dry as well as the humid process.)

Medicinal Properties.—Internally as a tonic, especially in spasmodic affections. Externally, an astringent application in eczema and slight excoriations and ulcerations, in the form of ointment or pastes; also absorbent as a dusting powder when mixed with Starch.

Dose.—2 to 10 grs.

Can be made into pills with Conf. Rosæ Caninæ.

Preparations.

OLEATUM ZINCI.

Oxide of Zinc, 1; Oleic Acid (by weight), 9; stir the Oxide with the Oleic Acid, and allow the mixture to stand for two hours, then heat on a water-bath until the Oxide is dissolved.

UNGUENTUM ZINCI.

Oxide of Zinc, in very fine powder, 80 grs.; Benzoated Lard, 1 oz. Add the Oxide to the melted Lard, and stir till cold. =(1 in 6½).

(Austr., 1 in 7½; Belg., Dan., Dutch, Fr. (Pommade), Ger., Hung., Norw., Russ., and Swiss, 1 in 10; Span., 1 in 16; U.S., 1 in 5; not in Port. or Swed.)

Applied to the feet once in twenty-four hours, prevents the unpleasant odour of perspiration.

UNGUENTUM ZINCI OLEATI.

Oleate of Zinc, 1; Soft Paraffin, 1; mix by the aid of a little heat, and stir till nearly cold.

Not Official.

DUSTING POWDER.—Oxide of Zinc, 3; Salicylic Acid (in fine powder), 1; Starch, 12.

LASSAR'S PASTE.—Oxide of Zinc, 24; Starch, 24; Salicylic Acid, 2; Soft Paraffin, 50. Used in eczema.

ZINCI OLEAS (Shoemaker's).—Acetate of Zinc, 180 grs.; dissolve in cold Water 40 oz. Add slowly 20 oz. of a **Solution of Oleate of Sodium**, made by dissolving powdered Castile Soap, 1 oz. in 20 oz. of Water; wash the precipitate with cold Water, collect, and dry.

It forms a solid cake, easily powdered, and melting at about 175° F.

Oleate of Sodium Solution of the above strength is also used to precipitate the Oleates of Bismuth, Copper, and Lead.

ZINC OXIDE PLASTER MULLS (Unna).—Containing ½ grain and 1 grain to the sq. inch.

ZINC AND SALICYLIC PLASTER MULL (Unna).—Containing Oxide of Zinc $\frac{1}{2}$ grain and Salicylic Acid $\frac{1}{4}$ grain to the sq. inch.

ZINC GELATINE (Unna).—Oxide of Zinc, 10; Gelatine, 10; Glycerine, 20; Water, 20.

Not Official.

ZINCI PHOSPHIDUM.

Minutely crystalline friable fragments, or a greyish-black powder, containing about 24 p.c. of Phosphorus, corresponding to the formula Zn_3P_2.

Solubility.—Insoluble in Water or Rectified Spirit. Soluble in acids with evolution of Phosphuretted Hydrogen, which is not spontaneously inflammable.

(Fr., Phosphure de Zinc; U.S.; not in the others.)

Medicinal Properties.—Strongly recommended as a substitute for Phosphorus.

Dose.—$\frac{1}{20}$ to $\frac{1}{4}$ grain, given in a pill.

Not Official.

ZINCI PERMANGANAS.

In reddish-purple crystalline masses.

Solubility.—About 1 in 3 of Water, generally with a slight residue.

An **injection** in chronic urethritis, 1 grain in 8 ozs. of water.—*B.M.J.* '89, i. 1458.

ZINCI SULPHAS.

SULPHATE OF ZINC.

$ZnSO_4.7H_2O$, eq. 287.

In colourless, transparent, prismatic crystals, with a strong metallic styptic taste.

Solubility.—10 in 7 of water. Insoluble in Rectified Spirit.

Tests.—Its watery solution is not tinged purple by Tincture of Galls—indicating absence of Iron; and when acidulated with Sulphuric or Hydrochloric Acid, gives no precipitate with Sulphuretted Hydrogen—indicating absence of Lead, Cadmium, and Copper. After it has been boiled for a few minutes with a little Nitric Acid, it yields with Ammonia a white precipitate, which is entirely soluble without colour in an excess of the reagent, and from which Alkaline Sulphides precipitate white Sulphide of Zinc.

(Austr., Ger., Hung., Russ., and Swiss, Zincum Sulfuricum; Belg., Sulphas Zinci; Dan., Dutch, Norw., and Swed., Sulphas Zincicus; Fr., Sulfate de Zinc; Port., Sulfato de Zinco; Span., Sulfato Zincico; U.S. Zinci Sulphas.)

Medicinal Properties.—In small doses tonic and astringent: chiefly employed in spasmodic diseases, as epilepsy, chorea, tussis. &c.; in large doses a prompt emetic. As an astringent injection in leucorrhœa and in the less acute stages of gonorrhœa; as a collyrium in ophthalmia.

Dose.—As a tonic or astringent, 1 to 2 grs.; emetic, 10 to 30 grs.

Tincture or Wine of Opium causes no precipitate with Solutions of Zinc.

Not Official.

INJECTIO ZINCI SULPHATIS.—Sulphate of Zinc, 3 grs.; Water 1 oz. For gonorrhœa and leucorrhœa.

LOTIO RUBRA.—Sulphate of Zinc, 2 grs.; Compound Tincture of Lavender, 10 mins.; Water to 1 oz. A stimulant to indolent ulcers.

LOTIO ZINCI SULPHATIS (*L.O.H.*).—Sulphate of Zinc, 1 gr.; Distilled Water, 1 oz. Used in Ophthalmia.

ZINCI SULPHOCARBOLAS.

SULPHOCARBOLATE OF ZINC.

$Zn(C_6H_5SO_4)_2, H_2O$, eq. 429.

Transparent tabular crystals.

Solubility.—1 in 2 of Water; 3 in 1 of boiling Water; 1 in 2½ of Rectified Spirit.

Tests.—The aqueous solution is coloured violet by Perchloride of Iron, and gives a white precipitate with Sulphydrate of Ammonium; it is not at once rendered turbid, or is rendered only faintly turbid by Chloride of Barium (trace of Sulphate), and is not precipitated by Oxalate of Ammonium (absence of Barium and Calcium).

(Dutch, Sulphophenylas Zincicus; Ger., Russ., and Swiss, Zincum Sulfocarbolicum; not in the others.)

Medicinal Properties.—Astringent and antiseptic.

For a **spray** to the throat, 5 grs. to the ounce of Water; for a **collunarium**, 2 grs. to the ounce; for **vaginal injection**, 60 grs. in a pint of Water, for leucorrhœa or gonorrhœa.

ZINCI VALERIANAS.

VALERIANATE OF ZINC.

$Zn(C_5H_9O_2)_2$, eq. 267.

In bright white, pearly, tabular crystals, with a feeble odour of Valerianic Acid and a metallic taste.

Solubility.—1 in 120 of water; 1 in 60 of Rectified Spirit; 1 in 500 of Ether.

Tests.—Its solution in hot Water is only faintly precipitated by Chloride of Barium (trace of Sulphate.) It gives, when heated with diluted Sulphuric Acid, a distillate (Valerianic Acid), which, when mixed with solution of Acetate of Copper, does not immediately affect the transparency of the fluid (indicating absence of Butyric Acid), but forms after a little time oily drops, which gradually pass into a bluish-white crystalline deposit (Valerianate of Copper).

Butyric Acid if present will form an immediate crystalline precipitate.

(Belg., Dutch, Fr., Hung., Norw., Port., Russ., Span., Swed., Swiss, and U.S.; not in Austr., Dan., or Ger.)

Medicinal Properties.—Antispasmodic, chiefly used in chorea, epilepsy, and in various neuralgic and hysterical affections.

Dose.—1 to 6 grs. or more, either in pill or solution.

Incompatibles.—All acids, soluble carbonates, most metallic salts, vegetable astringents.

ZINGIBER.

GINGER.

The scraped and dried rhizome of *Zingiber officinale;* from plants cultivated in the West Indies, India, and other countries.

(In all the Pharmacopœias; Fr., Gingembre; Port., Gengibre; Span., Jengibre.)

Medicinal Properties.—Aromatic stimulant and carminative.

It is given in dyspepsia, flatulency, and as an adjunct to purgative medicines.

Dose.—In powder, 10 to 20 grs.

Contained in Conf. Opii, Conf. Scammonii, Inf. Sennæ, Pil. Scillæ Comp., Pulv. Cinnam. Comp., Pulv. Jalapæ Comp., Pulv. Opii Comp., Pulv. Rhei Comp., Pulv. Scammonii Comp., Vin. Aloes.

Preparations.

SYRUPUS ZINGIBERIS.

Strong Tincture of Ginger, 6 drms.; Syrup, 19 oz.: mix. =(about 1 in 26).

Dose.—1 to 4 drms.

(U.S., with Fluid Extract, 1 in 50; Russ. 1 in 20, and Swed. 1 in 28, both from rhizome; not in the others.)

TINCTURA ZINGIBERIS.

Ginger, bruised, 1; Rectified Spirit, 8: macerate the Ginger forty-eight hours in 6 of the spirit, agitating occasionally; pack in a percolator, let it drain, pour on the remaining spirit, and when it ceases to drop, press, filter, and add Rectified Spirit to make 8. =(1 in 8).

Dose.—10 to 60 mins.

(Belg., Fr., Ger., Port., Russ., and Swiss, 1 and 5; Hung. and U.S., 1 in 5; all by weight; not in the others.)

TINCTURA ZINGIBERIS FORTIOR. *Syn.* ESSENTIA ZINGIBERIS.

Ginger, in powder, 10; Rectified Spirit, sufficient to percolate 20. Pack the Ginger tightly in a percolator, and pour over it carefully half of the Spirit, and after two hours add the remainder and as much more as is required to percolate 20. =(1 in 2).

Dose.—5 to 20 minims.

(Swiss, Tinct. Zingiberis Anglica, same as Brit.; not in the others.)

Contained in Syrup of Ginger = (1 in 26).

By repercolation a fluid Extract 1 in 1, or even 2 in 1, can be readily prepared. Our Ess. Zingib. has always been twice the B.P. strength.

Not Official.

OLEORESINA ZINGIBERIS (U.S.) *Syn.* GINGERINE.

Ginger, in No. 60 powder, 10; Stronger Ether, *q. s.* Press the Ginger firmly in a percolator, pour on the Ether, and when that has been absorbed, add Ether until 15 have slowly passed or until the Ginger is exhausted. Recover the greater part of the Ether by distillation, and expose the residue to air until the remaining Ether has evaporated.

(Not in the other Pharmacopœias.)

Not Official.

GRANULATED PREPARATIONS.

MADE IN THE MANNER DIRECTED IN THE BRITISH PHARMACOPŒIA FOR PREPARING SODII CITRO-TARTRAS EFFERVESCENS.

The following is the quantity usually contained in 60 grains = an ordinary teaspoonful, which is considered a commencing dose :—

Antipyrin, 5 grs.
,, 10 grs.
Antifebrin, 5 grs.
Bromide of Ammonium, 2 grs.
,, ,, Potassium, 2 grs.
,, ,, Sodium, 2 grs.
Carbonate of Bismuth, 2 grs.
,, ,, Iron, 2 grs.
,, ,, Lithium, 2 grs.
Citrate of Caffeine, 1 gr.
,, ,, Iron, 3 grs.
Citrate of Iron and Quinine, 3 grs.
,, ,, Cinchonine, 2 grs.
,, ,, Quinine, 1 gr.
Hypophosphite of Calcium, 2 grs.
Iodide of Iron, 1 gr.
,, ,, Potassium, 2 grs.
,, ,, Sodium, 2 grs.
Nitrate of Cerium, 1 gr.
,, ,, Potassium, 5 grs.
Phosphate of Iron, 1 gr.

The several imitations in a granular effervescent form of the following Mineral Waters, the dose being a large teaspoonful :—

Carlsbad.
Cheltenham.
Fachingen.
Kissingen.
Marienbad.
Pullna.
Seltzer.
Vichy.

Also for Gingerade and Lemonade.

SUPPOSITORIA.

SUPPOSITORIES.

Official.

ACIDI CARBOLICI C. SAPONE, Carbolic Acid, 1 gr. in each.

ACIDI TANNICI.
Tannic Acid, 3 grs. in each.

ACIDI TANNICI C. SAPONE, Tannic Acid, 3 grs. in each.

HYDRARGYRI.
Mercurial Ointment, 5 grs. in each.

IODOFORMI.
Iodoform, 3 grs. in each.

MORPHINÆ.
Hydrochlorate of Morphine, ½ gr. in each.

MORPHINÆ C. SAPONE, Hydrochlorate of Morphine, ½ gr. in each.

PLUMBI COMPOSITA.
Acetate of Lead, 3 grs.; Opium, 1 gr. in each.

Not Official.

Anthelmintic.

Santonin, 5 grs.

Antiseptic.

Carbolic Acid, 1 gr.
Iodoform, 5 grs.
Eucalyptus Oil, 5 mins. } mixed.
Sozoiodol, 5 grs.

Astringent.

Acetate of Lead, 3 grs.
Sulphate of Copper, 2 grs.
Iron Alum, 3 grs.
Galls, in powder, 5 grs.
Hydrastin, 1 gr.

Astringent and Sedative.

Galls, in powder, 5 grs.
Opium, in powder, 1 gr. } mixed.

Caustic.

Dried Sulphate of Zinc, 10 grs.

Cicatrizing and Emollient.

Oxide of Bismuth, 10 grs.
Borax, in powder, 5 grs.
Oxide of Zinc, 10 grs.

Purgative.

Purified Aloes, 5 grs.
Aloin, 1 gr.
Soap, 5 grs. } mixed.
Elaterium, ½ gr.
Gamboge, 3 grs.
Podophyllin, 1 gr.

Sedative.

Belladonna Extract, 2 grs.
Cocaine, 1 gr.
Hemlock Extract, 4 grs.
Henbane Extract, 5 grs.
Opium, in powder, 2 grs.
Opium Extract, 1 gr.
Sulphate of Morphine, ½ gr.

PESSARIES, OR VAGINAL SUPPOSITORIES.

Not Official.

(NO PESSARIES ARE ORDERED IN THE BRITISH PHARMACOPŒIA.)

Antacid.

Bicarbonate of Sodium, 15 grs.

Alterative and Resolvent.

Bromide of Potassium, 10 grs.
Iodide of Lead, 5 grs.
Iodide of Lead, 5 grs. }
Atropine, $\frac{1}{20}$ gr. } mixed.
Iodide of Potassium, 10 grs.
Mercurial Ointment, 30 grs.

Astringent.

Alum, in powder, 15 grs.
Alum, 15 grs. }
Catechu, 15 grs. } mixed.
Iron Alum, 10 grs.
Sulphate of Iron, dried, 10 grs.
Gallic Acid, 10 grs.
Acetate of Lead, 7 grs.
Acetate of Lead, 5 grs. }
Opium Powder, 2 grs. } mixed.
Matico, in powder, 10 grs.
Tannic Acid, 10 grs.

Hæmostatic.

Perchloride of Iron crystals, 5 grs.
Persulphate of Iron, solid, 15 grs.

Caustic.

Red Oxide of Mercury, 2 grs.
Sulphate of Zinc, dried, 10 grs.

Cicatrizing and Emollient.

Borax, in powder, 15 grs.
Oxide of Bismuth, 15 grs.
Oxide of Zinc, 15 grs.

Deodorant

Carbolate of Calcium, 10 grs.
Carbolic Acid, 2 grs.

Sedative.

Atropine, $\frac{1}{20}$ gr.
Belladonna Extract, 2 grs.
Conine, 1 gr.
Hemlock Extract, 5 grs.
Morphine Hydrochlorate, $\frac{1}{2}$ gr.
Opium, in powder, 2 grs.

URETHRAL SUPPOSITORIES, OR MEDICATED BOUGIES.

(Cylinders about $2\frac{1}{2}$ inches long; diameter of a No. 9 bougie.)

Acetate of Lead, $\frac{1}{2}$, $\frac{2}{3}$, and $\frac{3}{4}$ gr.
Belladonna Extract, 2 grs.
Bismuth Subnitrate, 10 grs.
Bismuth Subnitrate, 10 grs. }
Acetate of Lead, $\frac{1}{2}$ gr. } mixed.
Gallic Acid, 5 grs.
Opium Extract, 1 gr.
Perchloride of Iron, $\frac{1}{2}$, $\frac{3}{4}$, and 1 gr.
Sulphate of Iron, 3 grs.
Nitrate of Silver, $\frac{1}{4}$ gr.
Nitrate of Silver, 1 gr.
Tannic Acid, 1 gr.

Theobroma Oil is the usual substance employed for forming these agents, but Stearin and mixtures of Fats and Wax may be employed. The temperature at which these solidify will be found at page 409.

MEDICATED PLEDGETS OF COTTON.

The following (weighing 30 grs. each), and containing severally the quantities of ingredients as follows, have been introduced for the local treatment of Uterine affections:—

Bromide of Potassium, 4 grs.
Iodide of Potassium, 4 grs.
Iodine, 2 grs.
Matico Tincture, 30 minims.
Hydrochlorate of Morphine, $\frac{3}{4}$ gr.
Persulphate of Iron, 3 grs.
Tannic Acid, $2\frac{1}{2}$ grs.

AMERICAN ECLECTIC REMEDIES.

ALTERATIVE AND APERIENT.

Baptisin (*Wild Indigo*). Purgative and emetic, 1 to 5 grains; given in typhus and gangrene.

Is an hepatic, and also an intestinal stimulant of considerable power.—Dr. Rutherford.

Corydalin (*Turkey Pea Root*). Anti-syphilitic, alterative, tonic, ½ to 5 grs., and given with Hydrastin.

Euonymin (*Wahoo Bark*). See p. 185.

Iridin (*Blue Flag*). Renal alterative, ⅛ to ¼ gr.; purgative, diuretic, emetic, 1 to 5 grs.

Is a powerful hepatic stimulant; it also stimulates the intestines.—Dr. Rutherford.

Juglandin (*Butter Nut*).

Is a moderately powerful hepatic, and a mild intestinal stimulant.—Dr. Rutherford.

Leptandrin (*Veronica Virginica*). Hepatic alterative, ¼ to ½ gr.; purgative, 2 to 4 grs.

Is an hepatic stimulant of moderate power; it is a feeble intestinal stimulant.—Dr. Rutherford.

Phytolaccin (*Poke Root*). See page 312.

Podophyllin. See page 324.

Rumicin (*Yellow Dock*). Astringent, antiscorbutic, alterative, 2 to 5 grs.

Sanguinarin (*Blood Root*). Hepatic alterative ¼ to 1 gr.; somewhat narcotic.

Is a powerful hepatic, but a feeble intestinal stimulant.—Dr. Rutherford.

TONIC, ETC.

Asclepedin (*Pleurisy Root*). Expectorant and diaphoretic, 1 to 4 grs.

Caulophyllin (*Blue Cohosh*). Uterine and diuretic tonic, ¼ to 1 gr.; parturient, 2 to 4 grs.

Cimicifugin (*Actæa racemosa*). A nerve tonic and sedative, 2 to 4 grs.

Cornin (*Dogwood*). Stimulant astringent tonic, 1 to 10 grs.; increasing the pulse in force and frequency.

Cypripedin (*Ladies' Slipper*). Nervous stimulant, 1 to 3 grs.; in hypochondria.

Gelsemin (*Yellow Jasmine*). Nervous sedative, ½ to 2 grs.; antispasmodic anodyne.

This is not the alkaloid Gelseminine. See p. 211.

Geranin (*Cranesbill*). Astringent tonic, 1 to 5 grs., and given with Hydrastin in dysentery and diarrhœa.

Hydrastin (*Golden Seal*). See p. 237.

Menispermin (*Yellow Parilla*). Dyspeptic tonic, 1 to 2 grs.; aperient, 5 grs.

Does not stimulate the liver; it slightly stimulates the intestinal glands.—Dr. Rutherford.

Scutellarin (*Skullcap*). Nervous non-exciting tonic, 2 to 6 grs.; given in neuralgia.

Senecionin (*Life Root*). Diuretic and emmenagogue, 3 to 5 grs.; given in strangury.

APPENDIX.

I. ARTICLES EMPLOYED IN CHEMICAL TESTING.

ACETATE OF SODIUM. *See* p. 379.

BENZOL.

(C_6H_6.)

A colourless volatile liquid, obtained from coal tar. Specific gravity 0·85.

BENZOLATED AMYLIC ALCOHOL.

Mix together 3 volumes of Benzol and 1 of Amylic Alcohol; decant the supernatant fluid from any deposited Water.

CHLORIDE OF BARIUM.

($BaCl_2 . 2H_2O$.)

COPPER FOIL.

Pure Metallic Copper, thin and bright.

FERRICYANIDE OF POTASSIUM. *Syn.* Red Prussiate of Potash.

$K_6Fe_2C_{12}N_{12}$.

Test.—Its aqueous solution gives no precipitate with a dilute solution of a pure Ferric Salt.

GOLD, FINE.

Gold, free from metallic impurities.

HYPOSULPHITE OF SODIUM. *Syn.* Thiosulphate of Sodium.

($Na_2S_2O_3$, $5H_2O$.)

Test.—24·8 grains decolourize 1000 grain-measures of the volumetric solution of Iodine.

INDIGO.

(C_8H_5NO.)

A blue pigment prepared from various species of *Indigofera*, Linn.

ISINGLASS.

The swimming-bladder or sound of various species of *Acipenser*, Linn., prepared and cut into fine shreds.

LITMUS.

A blue pigment prepared from various species of *Roccella*, DC.

LITMUS PAPER, BLUE.

Unsized white paper steeped in Solution of Litmus, and dried by exposure to the air.

LITMUS PAPER, RED.

Unsized white paper steeped in Solution of Litmus which has been previously reddened by the addition of a very minute quantity of Acid, and dried by exposure to the air.

MOLYBDATE OF AMMONIUM.

($(NH_4)_2MO_4$.)

A solution of this salt in Liquor Ammoniæ, with subsequent addition of excess of Nitric Acid, is a delicate reagent for Phosphoric Acid, giving on warming an abundant yellow precipitate.

OXALIC ACID OF COMMERCE.

Oxalic Acid ($H_2C_2O_4$, $2H_2O$.), not quite pure.

OXALATE OF AMMONIUM.

($(NH_4)_2C_2O_4$, H_2O.)

Take of Oxalic Acid, 1 oz.; boiling Distilled Water, 8 fl. oz. Carbonate of Ammonium, a sufficiency: dissolve the Oxalic Acid in the Water, neutralize the solution with the Carbonate of Ammonium at finally a boiling temperature, filter it while still hot, and set it aside that crystals may form.

PETROLEUM SPIRIT. *Syn.* BENZOLINE; PETROLEUM ETHER.

A colourless, very volatile, and highly inflammable liquid obtained from Petroleum, and consisting of a mixture of the lower members of the Paraffin or Marsh-gas series of Hydrocarbons. Boiling point 122° to 140° F. (50° to 60° C.) Sp. g. about ·670 to ·700.

PHENOL-PHTHALEIN.

Produced by the reaction of Phenol and Phthalic Anhydride. Its Tincture yields an intense red colour with Potash or Soda, hence may be used as an indicator of the termination of volumetric reactions, especially those with organic acids.

PLATINUM BLACK.

Platinum in a state of minute division, obtained by adding excess of Carbonate of Sodium and some Sugar to solution of Perchloride of Platinum, and boiling till a black precipitate is formed, which is washed and dried.

PLATINUM FOIL.

SUBACETATE OF COPPER OF COMMERCE.

Verdigris.

SULPHATE OF COPPER, ANHYDROUS.

($CuSO_4$.)

Sulphate of Copper deprived of its water by a heat of 400° F. (204·4° C.).

A yellowish-white powder, which becomes blue when moistened with water.

SULPHIDE OF IRON.

(FeS.)

Prepared by combining its elements in proper proportions by the aid of heat. Small quantities may be produced by applying the end of a rod of iron, heated to whiteness at a blacksmith's forge, to the end of a roll of Sulphur, and allowing the Sulphide of Iron, as it is formed, to run into a vessel of water.

SULPHURETTED HYDROGEN.

(H_2S.)

Take of Sulphide of Iron, $\frac{1}{2}$ oz.; Water 4 fl. oz.; Sulphuric Acid, a sufficiency: place the Sulphide of Iron and the Water in a gas-bottle closed with a cork perforated by two holes, through one of which passes air-tight a funnel tube of sufficient length to dip into the water, and through the other a tube for giving exit to the gas. Through the former pour from time to time a little of the Acid, so as to develop the Sulphuretted Hydrogen as it may be required.

When the gas is employed, either in chemical testing or in the preparation of Acidum Hydrobromicum Dilutum, it should be washed by passing it through a similarly fitted bottle containing water.

TIN, GRANULATED.

Grain tin, reduced to small fragments by fusing and, immediately the tin is melted, pouring it in a thin stream into cold water.

TURMERIC.

The dried Rhizome of *Curcuma longa*, Linn.

TURMERIC PAPER.

Unsized white paper steeped in Tincture of Turmeric, and dried by exposure to the air.

TURMERIC TINCTURE.

Take of Turmeric, bruised, 1 oz.; Rectified Spirit, 6 fl. oz.: macerate for seven days in a closed vessel, and filter.

II. TEST SOLUTIONS.

SOLUTION OF ACETATE OF COPPER.

Take of Subacetate of Copper of Commerce, in fine powder, $\frac{1}{2}$ oz.; Acetic Acid, 1 fl. oz.; Distilled Water, a sufficiency: dilute the Acid with $\frac{1}{2}$ fl. oz. of the Water; digest the Subacetate of Copper in the mixture, at a temperature not exceeding 212° F. (100° C.), with repeated stirring, and continue the heat until a dry residue is obtained. Digest this in 4 oz. of boiling Distilled Water, and by the addition of more of the Water make up the solution to 5 fl. oz. Filter it.

SOLUTION OF ACETATE OF POTASSIUM.

Take of Acetate of Potassium, $\frac{1}{2}$ oz.; Distilled Water, 5 fl. oz.: dissolve and filter.

SOLUTION OF ACETATE OF SODIUM.

Take of Acetate of Sodium, $\frac{1}{2}$ oz.; Distilled Water, 5 fl. oz.: dissolve and filter.

SOLUTION OF ALBUMEN.

Take the White of one Egg; Distilled Water, 4 fl. oz.: mix by trituration in a mortar, and filter through clean tow first moistened with distilled water. This solution must be recently prepared.

SOLUTION OF AMMONIO-NITRATE OF SILVER.

Take of Nitrate of Silver, in crystals, $\frac{1}{4}$ oz.; Solution of Ammonia, $\frac{1}{2}$ fl. oz., or a sufficiency; Distilled Water, a sufficiency: dissolve the Nitrate of Silver in 8 fl. oz. of Water, and to the solution add cautiously the Ammonia until the precipitate first formed is nearly dissolved. Clear the solution by filtration, and then add Distilled Water, so that the bulk may be 10 fl. oz.

SOLUTION OF AMMONIO-SULPHATE OF COPPER.

Take of Sulphate of Copper, in crystals, $\frac{1}{2}$ oz.; Solution of Ammonia, a sufficiency; Distilled Water, a sufficiency: dissolve the Sulphate of Copper in 8 fl. oz. of water, and to the solution add cautiously the Ammonia until the precipitate first formed is nearly dissolved. Clear the solution by filtration, and then add Distilled Water, so that the bulk may be 10 fl. oz.

SOLUTION OF AMMONIO-SULPHATE OF MAGNESIUM.

Take of Sulphate of Magnesium, 1 oz.; Chloride of Ammonium, $\frac{1}{2}$ oz.; Solution of Ammonia, $\frac{1}{2}$ fl. oz.; Distilled Water, a sufficiency: dissolve the Sulphate of Magnesium and Chloride of Ammonium in 8 fl. oz. of the water, and to the solution add the Ammonia, and as much Distilled Water as will make up the bulk to 10 fl. oz. Filter it.

SOLUTION OF BORIC ACID.

Take of Boric Acid, 50 grs.; Rectified Spirit, 1 fl. oz.: dissolve and filter.

SOLUTION OF BROMINE.

Take of Bromine, 10 minims; Distilled Water, 5 fl. oz: place the Bromine in a bottle furnished with a well-fitting stopper, pour on the water, and shake several times. Keep it excluded from the light.

SOLUTION OF CARBONATE OF AMMONIUM.

Take of Carbonate of Ammonium, in small pieces, ½ oz.; Solution of Ammonia, ¾ fl. oz.; Distilled Water, 10 fl. oz.: dissolve and filter.

SOLUTION OF CHLORIDE OF AMMONIUM.

Take of Chloride of Ammonium, 1 oz.; Distilled Water, 10 fl. oz.: dissolve and filter.

SOLUTION OF CHLORIDE OF BARIUM.

Take of Chloride of Barium, in crystals, 1 oz.; Distilled Water, 10 fl. oz.: dissolve and filter.

SOLUTION OF FERRICYANIDE OF POTASSIUM.

Ferricyanide of Potassium, in crystals, ¼ oz.; Distilled Water, 5 fl. oz.: dissolve and filter.

SOLUTION OF FERROCYANIDE OF POTASSIUM.

Ferrocyanide of Potassium, in crystals, ¼ oz.; Distilled Water, 5 fl. oz.: dissolve and filter.

SOLUTION OF IODIDE OF POTASSIUM.

Take of Iodide of Potassium, 1 oz.; Distilled Water, 10 fl. oz.: dissolve and filter.

SOLUTION OF ISINGLASS.

Take of Isinglass, in shreds, 50 grs.; Warm Distilled Water, 5 fl. oz.: mix and digest for half an hour on a water bath with repeated shaking, and filter through clean tow moistened with distilled water.

SOLUTION OF LITMUS.

Litmus, in powder, 1 oz.; Rectified Spirit, 10 fl. oz.; Distilled Water, 10 fl. oz.; boil the Litmus with 4 fl. oz. of the Spirit for one hour, and pour away the clear fluid; repeat this operation with 3 fl. oz. of the Spirit; and a third time with the remainder of the Spirit. Digest the residual Litmus in Distilled Water and filter.

SOLUTION OF OXALATE OF AMMONIUM.

Take of Oxalate of Ammonium, ½ oz.; Warm Distilled Water, 20 fl. oz.: dissolve and filter.

SOLUTION OF PERCHLORIDE OF GOLD.

Take of Fine Gold, reduced by a rolling machine to a thin lamina, 60 grs.; Nitric Acid, 1½ fl. dr.; Hydrochloric Acid, 7 fl. drs.; Distilled Water, a sufficiency: place the Gold in a flask with the Nitric Acid and 6 fl. drs. of the Hydrochloric Acid, first mixed with 4 fl. drs. of the water, and digest until it is dissolved. Add to the solution the additional fluid dr. of Hydrochloric Acid, evaporate at a heat not exceeding 212° F. (100° C.) until acid vapours cease to be given off, and dissolve the Chloride of Gold thus obtained in 5 fl. oz. of Distilled Water. The solution should be kept in a stoppered bottle.

SOLUTION OF PERCHLORIDE OF PLATINUM.

Take of Thin Platinum Foil, ¼ oz.; Nitric Acid, a sufficiency; Hydrochloric Acid, a sufficiency; Distilled Water, 7 fl. oz.: mix 1 fl. oz. of the Nitric Acid with 4 fl. oz. of the Hydrochloric Acid, and 2 fl. oz. of the water; pour the mixture into a small flask containing the Platinum, and digest with a little heat, adding more of the acids mixed in the same proportion, should this be necessary, until the metal is dissolved. Transfer the solution to a porcelain dish, add to it 1 fl. drm. of Hydrochloric Acid, and evaporate on a water bath until acid vapours cease to be given off. Let the residue be dissolved in the remaining 5 oz. of Distilled Water. Filter, and preserve it in a stoppered bottle.

SOLUTION OF PHOSPHATE OF SODIUM.

Take of Phosphate of Sodium, in crystals, 1 oz.; Distilled Water, 10 fl. oz.: dissolve and filter.

SOLUTION OF POTASSIO-MERCURIC IODIDE. *Syn.* NESSLER'S REAGENT.

Take of Iodide of Potassium, 270 grs.; Perchloride of Mercury, a sufficiency; Caustic Soda, 2 oz; Distilled Water, 20 oz.: dissolve the Iodide of Potassium and 100 grs. of the Perchloride of Mercury in 15 fl. oz. of boiling Distilled Water. To this fluid add more aqueous solution of the Perchloride of Mercury until the precipitate produced no longer continues to disappear on well stirring, and a slight permanent precipitate remains. Then add the Caustic Soda. When the latter has dissolved, add a little more of the aqueous solution of Perchloride of Mercury, shake and allow to settle, and dilute the whole with Distilled Water to the volume of 20 oz.

The solution should be kept in a stoppered bottle.

As the stopper is very likely to become fixed, it should be wiped over with a little Soft Paraffin.

SOLUTION OF STANNOUS CHLORIDE.

Take of Granulated Tin, 1 oz.; Hydrochloric Acid, 3 fl. oz.; Distilled Water, a sufficiency: dilute the Acid in a flask with 1 fl. oz. of the water, and, having added the Tin, apply heat gently until gas ceases to be evolved. Add as much of the water as will make up the bulk to 5 fl. oz., and transfer the solution, together with the undissolved Tin, to a bottle with an accurately ground stopper.

SOLUTION OF SULPHATE OF CALCIUM.

Take of Sulphate of Calcium, $\frac{1}{4}$ oz.; Distilled Water, 20 oz.: rub the Sulphate of Calcium in a porcelain mortar, for a few minutes, with 2 oz. of the Water, introduce the mixture thus obtained into a pint bottle containing the rest of the Water, shake well several times, and allow the undissolved Sulphate to subside. Filter.

SOLUTION OF SULPHATE OF INDIGO.

Take of Indigo, dry, and in fine powder, 5 grs.; Sulphuric Acid, 10 fl. oz.: mix the Indigo with 1 fl. drm. of the Sulphuric Acid in a small test-tube, and heat on a water bath for an hour. Pour the blue liquid into the remainder of the Acid, agitate the mixture, and when the undissolved Indigo has subsided, decant the clear liquid into a stoppered bottle.

SOLUTION OF SULPHATE OF IRON.

Take of Granulated Sulphate of Iron, 10 grs.; Boiling Distilled Water, 1 fl. oz.: dissolve and filter. The solution should be recently prepared.

SOLUTION OF SULPHYDRATE OF AMMONIUM.

Take of Solution of Ammonia, 5 fl. oz.: put 3 fl. oz. of the Ammonia into a bottle, and conduct into this a stream of Sulphuretted Hydrogen so long as the gas continues to be absorbed, then add the remainder of the Ammonia, and transfer the solution to a green-glass bottle furnished with a well-ground stopper.

SOLUTION OF TARTARIC ACID.

Take of Tartaric Acid, in crystals, 1 oz.; Distilled Water, 8 fl. oz.; Rectified Spirit, 2 fl. oz.: dissolve the Tartaric Acid in the Water, add the Rectified Spirit, and preserve the solution in a stoppered bottle.

SOLUTION OF YELLOW CHROMATE OF POTASSIUM.

Take of Red Chromate of Potassium, 295 grs.; Bicarbonate of Potassium, 200 grs.; Distilled Water, 10 fl. oz.: dissolve the Red Chromate in the Water, and exactly neutralize the solution with the Bicarbonate, evolution of all Carbonic Acid being ensured by ebullition. Filter.

TINCTURE OF PHENOL-PHTHALEIN.

Take of Phenol-Phthalein, 1 gr.; Proof Spirit, 500 grs.: dissolve. The solution should be colourless.

III. TEST SOLUTIONS FOR VOLUMETRIC ESTIMATIONS.

The processes for volumetric estimations may be performed either with British or with metric weights and measures, and the solutions are so arranged that they will be of the same strength, and the same indications will be obtained in using them, whichever system is employed, without the *necessity* of altering any of the figures by which the quantities of the substances tested, or of the test solutions required in the process, are expressed.

According to the British system, the quantities of the substances to be tested are expressed in grains by weight, whilst the quantities of the test solutions employed in testing are expressed in grain-measures,—the grain-measure being the volume of a grain of Distilled Water.

According to the metric system, the quantities of the substances to be tested are expressed in grammes by weight, whilst the quantities of the test solutions employed in testing are expressed in cubic centimetres,—the cubic centimetre (C.C.) being the volume of a gramme of Distilled Water.

As the cubic centimetre bears the same relation to the gramme that the grain-measure bears to the grain, the one system may be substituted for the other with no difference in the results, excepting that, by the metric system, all the quantities will be expressed in relation to a weight (the gramme) which is rather more than fifteen (15·432) times greater than the British grain.

In practice it will be found convenient, in substituting metric for British weights and measures, to reduce the values of all the numbers to one-tenth, by moving the decimal points, and this has been done in the tables appended to the descriptions of the volumetric solutions. The quantities indicated in the Pharmacopœia, which in grains and grain-measures can be conveniently used, would be found inconveniently large if the same numbers of grammes and cubic centimetres were employed.

The following apparatus is required in the preparation and use of these solutions.

For British weights and measures:—

1. A flask which, when filled to a mark on the neck, contains exactly 10,000 grains of Distilled Water at 60° F. (15·5° C.). The capacity of the flask is therefore 10,000 grain-measures.

2. A graduated cylindrical jar which, when filled to 0, holds 10,000 grains of Distilled Water, and is divided into 100 equal parts.

3. A burette. A graduated glass tube which, when filled to 0, holds 1000 grains of Distilled Water, and is divided into 100 equal parts. Each part therefore corresponds to 10 grain-measures.

For metric weights and measures:—

1. A glass flask which, when filled to a mark on the neck, contains one litre or 1000 cubic centimetres.

2. A graduated cylindrical jar which, when filled to 0, contains one litre (1000 cubic centimetres), and is divided into 100 equal parts.

3. A burette. A graduated tube which, when filled to 0, holds 100 cubic centimetres, and is divided into 100 equal parts.

(One cubic centimetre is the volume of one gramme of Distilled Water at 4° C=39·2° Fahr. 1000 cubic centimetres equal one litre.)

Volumetric solutions, before being used, should be shaken in order that they may be throughout of uniform strength. They should also be preserved in stoppered bottles. All measurements should be made at 60° Fahr. (15·5° C.).

VOLUMETRIC SOLUTION OF BICHROMATE OF POTASSIUM.

(Bichromate of Potassium, $K_2Cr_2O_7$=295.)

Take of Bichromate of Potassium, 147·5 grs.; Distilled Water, a sufficiency: put the Bichromate of Potassium into the 10,000-grain flask, and, having half filled the flask with water, allow the salt to dissolve; then dilute the solution with more water, until it has the exact bulk of 10,000 grain-measures. 1000 grain-measures of this solution contain $\frac{1}{20}$th of an equivalent in grains (=14·75 grains) of Bichromate of Potassium, and when added to a solution of a Ferrous Salt acidulated with Hydrochloric Acid, are capable of converting $\frac{1}{20}$th of six equivalents of Iron (=16·8 grains) from the Ferrous to the Ferric state.

Grammes and cubic centimetres may be employed instead of grains and grain-measures, but for convenience $\frac{1}{10}$th of the numbers should be taken. Thus 14·75 grammes of Bichromate of Potassium should be made to form 1000 cubic centimetres of solution. 100 cubic centimetres of this solution contain $\frac{1}{200}$th of an equivalent in grammes of the Bichromate of Potassium (=1·475 grammes), and are capable of converting $\frac{1}{200}$th of six equivalents of Iron (1·68 grammes) from the Ferrous to the Ferric state.

This solution is used for determining the proportion of Ferrous Salt in the following preparations. It is known that the whole of the Ferrous Salt has been converted into a Ferric Salt when a minute drop of the liquid, placed in contact with a drop of a very dilute solution of Ferricyanide of Potassium on a white plate, ceases to strike with it a blue colour.

	British Weights and Measures.				Metrical Weights and Measures.		
	Grains weight of Substance.	=	Grain-measures of Vol. Sol.	or	Grammes weight of Substance.	=	C. C. of Vol. Sol.
Ferri Arsenias . . .	100	=	225	or	10·0	=	22·5
,, Carb. Sacch. .	30	=	287·5	or	3·0	=	28·75
,, Phosphas . . .	30	=	279	or	3·0	=	27·9
,, Sulphas . . .	42·1	=	500	or	4·21	=	50·0
,, ,, Exsiccata	10·0	=	191	or	1·0	=	19·1
,, ,, Granulata	41·7	=	500	or	4·17	=	50·0

VOLUMETRIC SOLUTION OF HYPOSULPHITE OF SODIUM.

(Hyposulphite of Sodium Crystallized, $Na_2S_2O_3$, $5H_2O = 248$.)

Take of Hyposulphite of Sodium, in crystals, 280 grs.; Distilled Water, a sufficiency: dissolve the Hyposulphite of Sodium in 10,000 grain-measures of water. Fill a burette with this solution, and drop it cautiously into 1000 grain-measures of the Volumetric Solution of Iodine, until the brown colour is just discharged. Note the number of grain-measures (n) required to produce this effect; then put 8000 grain-measures of the same solution into a graduated jar, and augment this quantity by the addition of Distilled Water, until it amounts to $\frac{8000 \times 1000}{n}$ grain-measures. If, for example, $n = 950$, the 8000 grain-measures of solution should be diluted to the bulk of $\frac{8000 \times 1000}{950} = 8421$ grain-measures. 1000 grain-measures of this solution contain $\frac{1}{10}$th of an equivalent in grains = 24·8 grains of the Hyposulphite, and therefore correspond to $\frac{1}{10}$th of an equivalent in grains = 12·7 grains of Iodine.

Grammes and cubic centimetres may be employed instead of grains and grain-measures, but for convenience $\frac{1}{10}$th of the numbers should be taken. 100 cubic centimetres of this solution contain $\frac{1}{100}$th of an equivalent of Hyposulphite in grammes (= 2·48 grammes), and therefore correspond to $\frac{1}{100}$th of an equivalent in grammes (1·27 grammes) of Iodine.

The solution is used for testing the following substances. In each case, excepting that of Iodine, a solution of Iodide of Potassium and Hydrochloric Acid is added to the substance, and the amount of Iodine so liberated is indicated by this solution.

	British Weights and Measures.				Metrical Weights and Measures.		
	Grains weight of Substance.	=	Grain-measures of Vol. Sol.	or	Grammes weight of Substance.	=	C. C. of Vol. Sol.
Calx Chlorinata . .	5·0	=	467	or	0·50	=	46·7
Iodum	12·7	=	1000	or	1·27	=	100·0
Liq. Calc. Chlorinatæ	80·0	=	450	or	8·00	=	45·0
,, Chlori . . .	439·0	=	750	or	43·90	=	75·0
,, Sodæ Chlorinatæ	70·0	=	500	or	7·00	=	50·0

VOLUMETRIC SOLUTION OF IODINE.

(Iodine, I = 127.)

Take of Iodine, 127 grains; Iodide of Potassium, 180 grains; Distilled Water, a sufficiency: put the Iodide of Potassium and the Iodine into the 10,000-grain flask, fill the flask to about two-thirds its bulk with Distilled Water, gently agitate until solution is complete, and then dilute the solution with more water until it has the exact volume of 10,000 grain-measures. 1000 grain-measures of this solution contain $\frac{1}{10}$th of an equivalent in grains (12·7 grains) of Iodine, and therefore correspond to 1·7 grains of Sulphuretted Hydrogen, 3·2 grains of Sulphurous, and 4·95 grains of Arsenious Anhydride.

Grammes and cubic centimetres may be employed instead of grains and grain-measures, but for convenience $\frac{1}{10}$th of the numbers should be taken. 100 cubic centimetres contain 1·27 grammes of Iodine, and correspond to 0·17 gramme of Sulphuretted Hydrogen, 0·32 gramme of Sulphurous Anhydride, and 0·495 gramme of Arsenious Anhydride.

This solution is used for testing the following substances. It is dropped from the burette into the liquid to be tested until free Iodine begins to appear in the solution.

	British Weights and Measures.				Metrical Weights and Measures.		
	Grains weight of Substance.	=	Grain-measures of Vol. Sol.	or	Grammes weight of Substance.	=	C. C. of Vol. Sol.
Acid. Arseniosum . .	4·0	=	808	or	0·40	=	80·8
,, Sulphurosum . .	64·0	=	1000	or	6·40	=	100·0
Liquor Arsenicalis . .	442·0	=	875	or	44·20	=	87·5
,, Arsenici Hydrochloricus	442·0	=	875	or	44·20	=	87·5
Sodii Hyposulphis . .	24·8	=	1000	or	2·48	=	100·0

VOLUMETRIC SOLUTION OF NITRATE OF SILVER.

(Nitrate of Silver, $AgNO_3 = 170$.)

Take of Nitrate of Silver, 170 grs.; Distilled Water, a sufficiency: put the Nitrate of Silver into the 10,000-grain flask, and, having half filled the flask with water, allow the salt to dissolve; then dilute the solution with more water until it has the exact volume of 10,000 grain-measures. The solution should be kept in an opaque stoppered bottle. 1000 grain-measures of this solution contain $\frac{1}{10}$th of an equivalent in grains (17 grains) of Nitrate of Silver.

Grammes and cubic centimetres may be employed instead of grains and grain-measures, but for convenience $\frac{1}{10}$th of the numbers should be taken. 100 cubic centimetres contain $\frac{1}{100}$th of an equivalent in grammes (1·7 grammes) of Nitrate of Silver.

It is used in testing the following substances:—

	British Weights and Measures.				Metrical Weights and Measures.		
	Grains weight of Substance.	=	Grain-measures of Vol. Sol.	or	Grammes weight of Substance.	=	C. C. of Vol. Sol.
Acid. Hydrocyan. Dil.	270	=	1000	or	27·0	=	100·0
Ammonii Bromidum .	5	=	508·5 to 514·5	or	0·5	=	50·85 to 51·45
Aqua Laurocerasi .	810	=	150	or	81·0	=	15
Potassii Bromidum .	10	=	838 to 850	or	1·0	=	83·8 to 85·0
,, Cyanidum . .	10	=	730	or	1·0	=	73·0
,, Iodidum . .	10	=	602	or	1·0	=	60·2
Sodii Bromidum . .	10	=	960	or	1·0	=	96·0
,, Iodidum . . .	10	=	660	or	1·0	=	66·0

VOLUMETRIC SOLUTION OF OXALIC ACID.

(Crystallized Oxalic Acid, $H_2C_2O_4 . 2H_2O = 126$.)

Take of Oxalic Acid, in crystals, 660 grs.; Distilled Water, a sufficiency: put the Oxalic Acid into the 10,000-grain flask, fill the flask to about two-thirds of its bulk with water, allow the acid to dissolve, and then dilute the solution with more water until it has the exact volume of 10,000 grain-measures. Fill a burette with the fluid, and add it gradually to a solution of 10·6 grains of pure Carbonate of Sodium (which may be obtained by heating the ordinary pure Bicarbonate of Sodium to redness in a platinum crucible for a quarter of an hour), containing a few drops of Solution of Litmus, until the red colour produced ceases to change to blue on boiling. Note the number of grain-measures used (n), then put 9000 grain-measures of the Solution of Oxalic Acid into a graduated jar, and augment this quantity by the addition of Distilled Water until it amounts to $\frac{9000 \times 200}{n}$ grain-measures. 1000 grain-measures of this solution contain half an equivalent in grains (=63 grains) of Oxalic Acid, and are therefore capable of neutralizing one equivalent in grains of an alkali, such as Potash, KHO, or Soda, $NaHO$, or half an equivalent in grains of such salts as Anhydrous Carbonate of Sodium Na_2CO_3.

Grammes and cubic centimetres may be employed instead of grains and grain-measures, but for convenience $\frac{1}{10}$th of the numbers should be taken. 100 cubic centimetres contain $\frac{1}{20}$th of an equivalent in grammes (=6·3 grammes) of Oxalic Acid, and will neutralize $\frac{1}{10}$th of an equivalent in grammes of an alkali.

The following substances are tested with this solution :—

	British Weights and Measures.				Metrical Weights and Measures.		
	Grains weight of Substance.	=	Grain-measures of Vol. Sol.	or	Grammes weight of Substance.	=	C. C. of Vol. Sol.
Ammonii Carbonas . .	52·3	=	1000	or	5·23	=	100·0
Borax	191·0	=	1000	or	19·10	=	100·0
Liq. Ammoniæ . . .	85·0	=	500	or	8·50	=	50·0
,, ,, Fort. .	52·3	=	1000	or	5·23	=	100·0
,, Calcis	4375·0	=	180	or	437·50	=	18·0
,, ,, Sacchar. .	460·2	=	254	or	46·02	=	25·4
,, Plumbi Subacet. .	284·5	=	500	or	28·45	=	50·0
,, Potassæ	462·9	=	482	or	46·29	=	48·2
,, ,, Efferves. .	4375·0	=	150	or	437·50	=	15·0
,, Sodæ	458·0	=	470	or	45·80	=	47·0
,, ,, Efferves. .	4375·0	=	178	or	437·50	=	17·8
Plumbi Acetas . . .	38·0	=	200	or	3·80	=	20·0
Potassa Caustica . .	56·0	=	900	or	5·60	=	90·0
Potassii Bicarbonas . .	50·0	=	500	or	5·00	=	50·0
,, Carbonas . .	83·0	=	980	or	8·30	=	98·0
,, Citras . . .	102·0	=	1000	or	10·20	=	100·0
,, Tartras . . .	122·0	=	990	or	12·20	=	99·0
,, ,, Acida .	204·0	=	1000	or	20·40	=	100·0
Soda Caustica . . .	40·0	=	900	or	4·00	=	90·0
,, Tartarata . . .	141·0	=	990	or	14·10	=	99·0
Sodii Bicarbonas. . .	84·0	=	1000	or	8·40	=	100·0
,, Carbonas . . .	143·0	=	960	or	14·30	=	96·0
Sodium.	23·0	=	975	or	2·30	=	97·5
Spir. Ammon. Arom. .	392·0	=	558	or	39·20	=	55·8

VOLUMETRIC SOLUTION OF SODA.

(Hydrate of Sodium, $NaHO = 40$.)

Take of Solution of Soda, a sufficiency; Distilled Water, a sufficiency: fill a burette with the Solution of Soda, and cautiously drop this into 1000 grain-measures of the volumetric Solution of Oxalic Acid, until the acid is exactly neutralized as indicated by Litmus. Note the number of grain-measures (n) of the Solution of Soda used, and, having then introduced 9000 grain-measures of it into a graduated jar, augment this quantity by the addition of water, until it becomes $\frac{9000 \times 1000}{n}$ grain-measures.

If, for example, $n = 930$, the 9000 grain-measures should be augmented to $\frac{9000 \times 1000}{930} = 9677$ grain-measures. 1000 grain-measures of this solution contain one equivalent in grains (40 grains) of Hydrate of Sodium, and will therefore neutralize one equivalent in grains of any monobasic acid, or half the equivalent in grains of any dibasic acid, &c.

Grammes and cubic centimetres may be employed instead of grains and grain-measures, but for convenience $\frac{1}{10}$th of the numbers should be taken. 100 cubic centimetres contain $\frac{1}{10}$th equivalent in grammes (4 grammes) of Hydrate of Sodium, and will neutralize $\frac{1}{10}$th of an equivalent in grammes of a monobasic acid.

This solution is used for testing the following substances:—

	British Weights and Measures.				Metrical Weights and Measures.		
	Grains weight of Substance.	=	Grain-measures of Vol. Sol.	or	Grammes weight of Substance.	=	C. C. of Vol. Sol.
Acetum	445·4	=	402	or	44·54	=	40·2
Acid. Aceticum	182·0	=	1000	or	18·20	=	100·0
,, ,, Dil.	440·0	=	313	or	44·00	=	31·3
,, ,, Glac.	60·0	=	990	or	6·00	=	99·0
,, Citricum	70·0	=	1000	or	7·00	=	100·0
,, Hydrobrom. Dil.	810·0	=	1000	or	81·00	=	100·0
,, Hydrochloricum	114·8	=	1000	or	11·48	=	100·0
,, ,, Dil.	345·0	=	1000	or	34·50	=	100·0
,, Lacticum	120·0	=	1000	or	12·00	=	100·0
,, ,, Dil.	700·0	=	1000	or	70·00	=	100·0
,, Nitricum	90·0	=	1000	or	9·00	=	100·0
,, ,, Dil.	361·3	=	1000	or	36·13	=	100·0
,, Nit. Hydrochl. Dil.	352·0	=	883	or	35·20	=	88·3
,, Sulphuricum	50·0	=	1000	or	5·00	=	100·0
,, ,, Arom.	195·0	=	500	or	19·50	=	50·0
,, ,, Dil.	359·0	=	1000	or	35·90	=	100·0
,, Tartaricum	25·0	=	330	or	2·50	=	33·0

INDICATORS OF THE TERMINATION OF REACTIONS IN VOLUMETRIC OPERATIONS.

MUCILAGE OF STARCH.

It gives an intense blue colour with Iodine. It may be used with the following substances:—

Acidum Arseniosum
,, Sulphurosum
Calx Chlorinata
Iodum
Liquor Arsenicalis
Liquor Arsenici Hydrochloricus
,, Calcis Chlorinatæ
,, Chlori
,, Sodæ Chlorinatæ
Sodii Hyposulphis

SOLUTION OF FERRICYANIDE OF POTASSIUM.

It gives an intensely blue precipitate with Ferrous Salts, but none with Ferric Salts. It is used with the following substances:—

Ferri Arsenias
,, Carbonas Saccharata
,, Phosphas
Ferri Sulphas
,, ,, Exsiccata
,, ,, Granulata

SOLUTION OF LITMUS.

It gives a red colour with acids and a blue colour with alkalies. It may be used with the following substances :—

Acidum Hydrochloricum
,, ,, Dilutum
,, Nitricum
,, ,, Dilutum
,, Nitro-Hydrochl. Dil.
,, Sulphuricum
,, ,, Arom.
,, ,, Dil.
Ammonii Carbonas
Borax
Liquor Ammoniæ
,, ,, Fortior
,, Calcis
,, ,, Saccharatus
,, Potassæ
Liquor Potassæ Effervescens
,, Sodæ
,, ,, Effervescens
Potassa Caustica
Potassii Bicarbonas
,, Carbonas
,, Citras
,, Tartras
,, ,, Acida
Soda Caustica
,, Tartarata
Sodii Bicarbonas
,, Carbonas
Spiritus Ammoniæ Aromaticus

SOLUTION OF YELLOW CHROMATE OF POTASSIUM.

It gives a red colour with Nitrate of Silver, but not in presence of a soluble Chloride, Bromide, or Iodide till sufficient Nitrate of Silver has been added to precipitate these as Silver Salts; hence its use as an indicator in titration. It may be used with the following substances :—

Ammonii Bromidum
Potassii ,,
Potassii Iodidum
Sodii Bromidum
Sodii Iodidum.

TINCTURE OF PHENOL-PHTHALEIN.

It gives an intense red colour with Potash or Soda. It may be used with the following substances :—

Acetum
Acidum Aceticum
,, ,, Dilutum
Acidum Aceticum Glaciale
,, Citricum
Tartaricum

SPAS OF EUROPE.

IN BRITAIN.

The solid contents of a pint are indicated by "grains in 20 fluid ounces."

AIRTHREY (Bridge of Allan). Saline Aperient; 91 grs. in 20 oz. Chlorides of Sodium, Calcium, and Magnesium, and Sulphate of Calcium.

ALDFIELD (Yorkshire). A soft water; slightly Sulphureous.

ASKERNE (Yorkshire). A soft water: weak Saline Aperient and Sulphureous. Old Manor, 30 grs. in 20 oz., chiefly Magnesia and Lime.

ASHBY-DE-LA-ZOUCH. Salt Brine, used only for baths, when mixed with water.

BATH (Somersetshire). Altitude 16′. The only true thermal waters in England. Saline, 17 grs. in 20 oz., chiefly Sulphate of Lime, with Carbonic Acid and Nitrogen. Swimming Bath, 88°; Cross Bath, 104°; Kingston Spring, 108° (which partly supplies King's Bath); Queen's, 112°; King's, 117°; Hot Bath, 120°. Baths for chronic rheumatism, gout, and paralysis.

BOSCOMBE (Bournemouth, Hampshire). Chalybeate; contains 2¾ grs., which includes ½ gr. Iron in 20 oz., with Carbonic Acid.

BRIGHTON (Sussex). A cold Chalybeate; contains 11½ grs., which includes 1 gr. Iron in 20 oz., with Carbonic Acid.

BRISTOL. Hot Wells, 80° F. Contains 7 grs. in 20 oz., chiefly Sulphates of Lime and Soda, with 4½ cubic inches of Carbonic Acid.

BUTTERBY (Durham). Sulphureous. Not important.

BUXTON (Derbyshire). Altitude 900′. Bracing air; pure water, temp. 82° F.; contains only 2¼ grs. in 20 oz., with ½ cubic inch of Carbonic Acid, and 60 cubic inches of Nitrogen. Good in chronic gout and rheumatism.

CHELTENHAM (Gloucestershire). Of the *Montpelier Spas*, No. 1 is Saline Aperient; No. 2, Ioduretted and Sulphuretted Chalybeate; 4, pure Saline; 4*a*, strongly Ioduretted Saline; 5, Ioduretted Magnesian Saline. Of the *Royal Old Wells*, one is Chalybeate, and the rest Saline Aperient; the whole with more or less Carbonic Acid. Season, from July to October.

CLIFTON (Gloucestershire). Air mild, elastic. Hot Well, 74° F. Feebly Saline; contains 5½ grs. in 20 oz. A resort for pulmonary patients.

CROFT (Yorkshire). Water 51° F. Saline, strongly Sulphureous; contains 19½ grs. in 20 oz.; chiefly Sulphate of Magnesia. Useful in skin diseases.

DINSDALE (Northamptonshire). Water 52° F. Strongly Sulphureous; contains 27 grs. in 20 oz., chiefly Sulphate of Lime. Acting on the skin and kidneys, and useful in dyspepsia.

DORTON (Buckinghamshire). Chalybeate, with Carbonic Acid; contains 12 grs. of Sulphate of Iron in 20 oz.; needs much dilution for internal use.

DROITWICH (Worcestershire). Brine pits; when diluted, used for salt-baths only.

DUNBLANE (Perthshire). Saline; contains 46 grs. in 20 oz., chiefly Chlorides of Calcium and Sodium.

FILEY (Yorkshire). Saline aperient; contains 49 grs. in 20 oz., chiefly Chlorides of Sodium, Magnesium, and Calcium, and Sulphate of Magnesia.

FLITWICK (Ampthill, Beds). Chalybeate Aperient; contains 31 grs. in 20 oz., Carbonate of Iron, Sulphates of Magnesia and Soda, Chloride of Magnesium, and Carbonate of Lime.

GAINSBOROUGH (Lincolnshire). Weak Saline, Chalybeate; not important.

GILSLAND (Cumberland). Air bracing and very healthy. Two springs; one strongly Chalybeate, and one strongly Sulphureous, useful in skin diseases and dyspepsia.

GLOUCESTER SPA. Contains 70 grains in 20 oz., chiefly Chloride of Sodium and Sulphate of Soda; not important.

HAIL-WESTON (St. Neots, Hunts). Saline Aperient; contains 30 grs. in 20 oz., more than half of which is Chloride of Sodium; also Sulphates of Magnesia and Soda, and Carbonate of Lime.

HARROGATE (Yorkshire). The old Sulphur spring contains 137 grs. in 20 oz., chiefly Chlorides, with 3·12 cubic inches of Carbonic Acid Gas, and 1·4 Sulphuretted and Carburetted Hydrogen. There are two principal Chalybeate springs. The new spring contains 62 grs. in 20 oz., chiefly Chlorides of Calcium, Magnesium, Potassium, and Sodium, with Protochloride of Iron, together with Carbonic Acid and Nitrogen.

HASTINGS (Sussex). Air mild, Chalybeate ; contains 2¾ grs. in 20 oz., chiefly Sulphates of Iron, Magnesia, Lime, and Soda, with 3¼ cubic inches Carbonic Acid Gas.

HOCKLEY (near Southend, Essex). Saline, and very mild Aperient.

HORLEY GREEN (Yorkshire). Aluminous, and strongly Chalybeate; contains large quantities of Sulphate of Iron. Not much used.

HOVINGDON (Northumberland). Feebly Alkaline and Sulphureous; 6 grs. in 20 oz., chiefly Carbonate of Soda and Chloride of Sodium.

INVERLEITHEN (Peeblesshire). Air pure, and scenery good. Saline; 28 grs. in 20 oz., chiefly Chlorides of Calcium and Sodium.

KINGSWOOD (Gloucestershire). Cherry rock bitter water; 56 grs. in 20 oz., chiefly Sulphates of Magnesia and Soda, with 4 cubic inches of Carbonic Acid.

LEAMINGTON (Warwickshire). Old Well, 48° F., contains 104 grs. in 20 oz., chiefly Chlorides of Calcium and Sodium, and Sulphate of Soda with Carbonic Acid. The Saline Chalybeate contains 132 grs. in 20 oz., chiefly Chlorides of Calcium, Magnesium, and Sodium, and Sulphate of Soda, with 2 cubic inches of Carbonic Acid. There are also other springs, useful in stomach and liver complaints.

LONDON, Bagnigge Wells, 1 Aperient, 1 Chalybeate; Chad's Well, near Battle Bridge, and St. Pancras Wells, both Aperient; Hampstead, Sadler's Wells, and Kensington Gardens, Chalybeate: Beulah, Kilburn, Epsom, and Streatham, are all Aperient; chiefly Sulphate of Magnesia.

MALTON (Yorkshire). A strong Saline Chalybeate, similar to Scarborough.

MALVERN (Worcestershire). Air mild, highly salubrious. Holywell, St. Anne, cold and pure, highly useful in painful affections of the kidneys and bladder.

MATLOCK (Derbyshire). Climate mild and humid. Calcareous, slightly Chalybeate, with Carbonic Acid.

MELKSHAM (Wiltshire). Two springs, one Saline, and one Chalybeate. These waters are charged with Carbonic Acid artificially, and bottled.

MOFFAT (Dumfriesshire). Hartfell spring, Aluminous and strongly Chalybeate; 12 grs. in 20 oz. A resort for pulmonary patients. Sulphur Wells, contains 4½ grs. in 20 oz., chiefly Chloride of Sodium, 1 cubic inch of Sulphuretted Hydrogen.

PITCAITHLY (Perthshire). Saline; contains 38 grs. in 20 oz., chiefly Chloride of Calcium and Chloride of Sodium, and 1 cubic inch of Carbonic Acid.

PURTON (Wiltshire). Iodide of Sodium and Bromide of Magnesium, with Sulphates of Magnesia and Soda: 43½ grs. in 20 oz., and 6 cubic inches of Carbonic Acid Gas.

SANDROCK (I. of Wight). Aluminous Chalybeate, with Carbonic Acid; contains 41½ grs. of Sulphate of Iron, and 31½ grs. of Sulphate of Alumina in 20 oz. Used for baths, but much diluted when taken internally.

SCARBOROUGH (Yorkshire). Altitude 174′. Two Saline Chalybeates. North Well 45¼ grs. in 20 oz. South Well, 66 grs. in 20 oz. Both Wells are similarly constituted, containing Sulphate of Lime and Sulphate of Magnesia, with a small amount of Nitrogen Gas.

SHAP (Westmoreland). Saline; contains 48 grs. to 20 oz., of which 26 are Chloride of Calcium; also traces of Sulphuretted Hydrogen. Tonic and diuretic; good in scrofula.

SHOTLEY (Northumberland). Saline, Chalybeate; contains 20 grs. in 20 oz., chiefly Chloride of Sodium, with 1 gr. Oxide of Iron, and 4½ grs. Chloride of Calcium. Not much frequented.

STRATHPEFFER (Ross-shire). Two springs; the Upper contains 18 grs. in 20 oz., chiefly Sulphates of Soda and Lime, with 3¼ c. in. of Sulphuretted Hydrogen; the Lower contains 13½ grs. in 20 oz. of the same Salts, but with only 1⅔ c. in. of Sulphuretted Hydrogen. The Upper contains the largest quantity of Sulphuretted Hydrogen of any spring in Britain. Much resorted to for gout, rheumatism, scrofula, and skin diseases.

TUNBRIDGE (Kent). Altitude 289′. Chalybeate; temp. 50° F.; contains only 1 gr. in 20 oz., including ⅛th of a grain of Iron, with Carbonic Acid.

TYNEMOUTH (Northumberland). Scenery picturesque. Chalybeates which may be drunk as an auxiliary to the sea-bathing, as at Scarborough.

VICTORIA (Stratford, Essex). Saline Aperient; contains 81 grs. in 20 oz., chiefly Sulphate of Soda, and ½ cubic inch of Sulphuretted Hydrogen. Useful in stomach and liver diseases.

WHITBY (Yorkshire). Bagdale, Chalybeate; nearly 3 grs. in 20 oz., and ⅕th gr. of Carbonate of Iron.

WINFRED at Holywell (Flintshire). Pure water, and flows at the rate of 21 tons a minute.

WOODHALL (Lincolnshire). 55° F. Iodine and Bromine, with Chlorides of Calcium, Magnesium, Potassium, more than ½ gr. Bromide of Sodium, and ¼ gr. Iodide of Sodium: 190 grs. in 20 oz.; strongly impregnated with Carbonic Acid. Useful in chronic rheumatism, scrofula, tertiary syphilis, etc.

FOREIGN.

The dose is from a wineglassful to a tumblerful, and at the spas the gas is often allowed to escape.

ACHSELMANNSTEIN (Bavaria), altitude 1407′. Saline, aperient, and slightly chalybeate. Climate mild and equable. Season, May to September.

Baths and Vapour Baths, for incipient tuberculosis, cutaneous diseases, and derangements of the uterine system.

Buchner's Analysis of 16 oz. Troy=7680 grs. of the Edelquelle brine spring:—

			1757·69
Chloride of Sodium . .	1723·10	Sulphate of Lime . . .	31·98
Chloride of Ammonium	·19	Carbonate of Lime . . .	·07
Chloride of Magnesium	13·84	Carbonate of Magnesia .	traces
Bromide of Magnesium	·23	Peroxide of Iron and Alumina	·06
Sulphate of Soda . . .	15·63	Silica	·08
Sulphate of Potash . .	4·70		
	1757·69		1789·88 grs.

Gas.—Carbonic Acid.

ADELHEIDSQUELLE (Heilbrunn, a healthy town in Bavaria), altitude 2000′. Saline, with Iodine and Bromine. Temp. of spring, 50° F. Season, May to September.

Powerfully alterative and tonic. Useful in scrofulous complaints, strumous affections of the skin, rheumatism, and gout, and for complaints peculiar to females.

Pettenkofer's Analysis of 16 oz. Troy = 7680 grs.—Contains about 47 grs. of solid matter, viz.:—

Chloride of Sodium . . .	38·06		45·48
Iodide of Sodium . . .	·21	Carbonate of Magnesia . .	·14
Bromide of Sodium . . .	·36	Alumina	·14
Carbonate of Soda . . .	6·21	Carbonate of Iron	·07
Chloride of Potassium . .	·02	Silica	·14
Sulphate of Soda . . .	·04	Phosphate of Lime . . .	traces
Carbonate of Lime . . .	·58	Organic matter	·16
	45·48		46·13 grs.

Gases.		Cub. Inch.
	Carbonic Acid	13·18
	Carburetted Hydrogen	8·02
	Nitrogen	6·54
	Oxygen	1·38
Imported.		29·12

AIX-LA-CHAPELLE (Rhenish Prussia), altitude 450′. Situated in a valley. Climate mild. Mean temperature in June, July, and August, 63° F. Saline, sulphureous.

Used for drinking, bathing, and douching; in cutaneous diseases, stiffness of joints, paralysis, obstructions of the liver, and syphilis.

Liebig's Analysis of 16 oz. Troy = 7680 grs. :—

	Kaiser-quelle.	Cornelius-quelle.	Rosen-quelle.	Quirinus-quelle.	
Temperature, Fahr.	131°	121·3°.	116·6°.	113·6°.	
Chloride of Sodium . . .	20·271	18·934	19·552	19·937	grains.
Bromide of Sodium . . .	·028	·028	·028	·028	,,
Iodide of Sodium . . .	·004	·004	·004	·004	,,
Sulphuret of Sodium . .	·073	·042	·057	·018	,,
Carbonate of Soda . . .	4·995	3·817	4·065	4·244	,,
Sulphate of Soda . . .	2·171	2·201	2·176	2·243	,,
Sulphate of Potash . . .	1·186	1·204	1·183	1·164	,,
Carbonate of Lime . . .	1·217	1·012	1·413	1·330	,,
Carbonate of Magnesia . .	·395	·192	·204	·257	,,
Carbonate of Strontia . .	·002	·002	·002	·002	,,
Carbonate of Lithia . . .	·002	·002	·002	·002	,,
Carbonate of Protoxide of Iron	·073	·046	·046	·040	,,
Silica	·508	·459	·455	·476	,,
Organic Matter	·577	·713	·703	·751	,,
	31·502	28·654	29·888	30·496	grains.
Gases.					
Nitrogen	9·00	7·79	9·14	6·41	per cent.
Carbonic Acid	89·40	92·91	90·31	93·25	,,
Carburetted Hydrogen . .	·37	traces	·55	·26	,,
Oxygen	1·23	traces	0·00	·08	,,

Imported.

AIX-LES-BAINS (Savoy), altitude 768′. Climate mild. For drinking and for douching.

Recommended for rheumatism, eczema, gout, and sciatica.

Bonjean's Analysis of 16 oz. Troy = 7680 grs. :—

	Sulphur Spring.	Alum Spring.	
Temperature, Fahr.	108·25°—111°.	108·25°—116·34°.	
Sulphate of Soda	·7374	·3256	grains.
Sulphate of Magnesia	·2709	·2380	,,
Sulphate of Lime	·1229	·1152	,,
	1·1312	·6788	

(*continued*)

	Sulphur Spring.	Alum Spring.	
Continued.	1·1312	·6788	grains.
Sulphate of Alumina	·4209	·4761	,,
Sulphate of Iron	traces	traces	,,
Chloride of Sodium	·0613	·1075	,,
Chloride of Magnesium	·1322	·1690	,,
Fluoride of Calcium Phosphate of Lime and Alumina	·0191	·0200	,,
Iodide of Potassium	traces	traces	,,
Carbonate of Lime	1·1405	1·3901	,,
Carbonate of Strontia	traces	traces	,,
Carbonate of Protoxide of Iron	·0680	·0719	,,
Silica	·0384	·0330	,,
	3·0116	2·9464	grains.
Gases.			
Nitrogen	·03204	·08010	volumes.
Carbonic Acid	·02578	·01334	,,
Sulphuretted Hydrogen	·04140	·0	,,
Oxygen	·0	·01840	,,
	·09922	·11184	volumes.

ALET (Aude, France). Thermal 82° F. for baths and a ferruginous water 50°. Tonic, and useful in cases of debility and dyspepsia.

ALEXANDERBAD (Bavaria). Altitude 1754′. Climate rough, and unsuited for delicate lungs. Scenery good. Water chalybeate, 50° F., very exciting. There is a hydropathic establishment, and pine-foliage baths for rheumatism.

Contains 2¼ grains of solid constituents in 16 oz. Troy = 7680 grs.
about ¼ grain Carbonate of Iron,
and 28 cubic inches of Carbonic Acid.

ALEXISBAD (Germany, 2 miles W. of Harzgerode). In the romantic Selke valley.

Source, Selkenbrunnen, Saline; 1⅓ grain in 16 oz. troy.
,, Alexisbrunnen, Ferruginous; 3½ grains in 16 oz. troy.
,, Ernabrunnen, Ferruginous; 1⅓ grain in 16 oz. troy.

ALTWASSER (Prussian Silesia, 35 miles S.W. of Breslau). Altitude 1255′. Lies in a charming valley. Climate mild and bracing. Water alkaline, chalybeate, tonic, restorative, for drinking and for baths.

Fischer's Analysis of 16 oz. Troy = 7680 grs.

	Georgen-brunnen.	Ober-brunnen.	
Temperature, Fahr.	70°.	70°.	
Carbonate of Iron	·37	·306	grains.
Carbonate of Manganese	0	·13	,,
Chloride of Potassium	·09	·09	,,
Sulphate of Potash	0	.086	,,
Sulphate of Soda	·89	·40	,,
Sulphate of Magnesia	0	·25	,,
Carbonate of Magnesia	·72	·308	,,
Carbonate of Lime	2·88	·860	,,
Sulphate of Lime	0	·100	,,
Carbonate of Soda	1·21	·000	,,
Silica	·08	·52	,,
	6·54	3·18	
Carbonic Acid	106 in 100	50 in 100	volumes.

APOLLINARIS (Neuenahr). Imported and drunk at meals. (*See* Neuenahr.)

ARNSTADT (Germany, 10 miles W. of Erfurt). Altitude 926′. Climate healthy. Season, June to September. Its brine spring, when diluted, used for baths, and for poultices with bran or malt; for scrofula. Contains about 1825 grains of solids in 16 oz. Troy=7680 grs. viz.:—

Chloride of Sodium	1723·0	grains.
Chloride of Calcium	49·5	"
Chloride of Magnesium	39·0	"
Sulphate of Lime	13·0	"
Bromide of Magnesium	0·39	"

AUTEUIL (Seine, France). A ferruginous water having properties similar to that of Alet.

BADEN (near Vienna). Altitude 638′. Air bracing, temperature changeable. Sulphureous and saline.

Chiefly used for bathing, in which both sexes promenade. The mineralized mud is employed for cataplasms in rheumatism.

Keller's Analysis of 16 oz. Troy=7680 grs.:—

Temperature,	Römer-quelle. 92°—97° Fahr.	Leopold's-quelle. 91·70°.	
Sulphuret of Magnesium	0·1250	·1180	grains.
Sulphate of Lime	5·6563	5·5473	"
Sulphate of Potash	·4892	·5560	"
Sulphate of Soda	2·1281	2·5766	"
Chloride of Sodium	1·9906	2·2659	"
Carbonate of Lime	1·3056	1·5936	"
Carbonate of Soda	·5329	·0530	"
Chloride of Magnesium	1·6156	1·5145	"
Silica	·1850	·2166	"
Organic Matter	·0431	0	"
	14·0714	14·4415	grains.
Gases.			
Carbonic Acid	1·433	3·2256	cubic inches.
Sulphuretted Hydrogen	·082	·6720	"
Nitrogen	·465	7·8711	"
Oxygen	·052	·9033	"
	2·032	12·6780	cubic inches.

BADEN-BADEN. Altitude 616′. Air pure and mild. Mean annual temperature 48° F. Season, May to October.

Baths for rheumatism and paralysis.

Bunsen's Analysis of 16 oz. Troy=7680 grs.:—

	Hauptquelle. Temperature 155·7° F.	
Chloride of Sodium	16·520	grains.
Bicarbonate of Lime	1·273	"
Bicarbonate of Magnesia	·042	"
Bicarbonate of Protoxide of Iron	·037	"
Bicarbonate of Protoxide of Manganese	traces	
Bicarbonate of Ammonia	·051	"
Sulphate of Lime	1·556	"
Sulphate of Potash	·017	"
Phosphate of Lime	·021	"
Arseniate of Iron	traces	
Chloride of Magnesium	·097	"
Chloride of Potassium	1·258	"
Bromide of Sodium	traces	
Silica	·914	"
Alumina	·008	"
Nitrates	traces	
	22·093	grains.
Free Carbonic Acid	·299	grains.

The Lithia waters for gout and lithiasis:—

	Mur-quelle.	Fett-quelle.	
Chloride of Sodium	15·5534	16·9767	grains
Chloride of Lithium	2·3694	·2315	,,
Chloride of Potassium	1·7985	·8137	,,
Chloride of Magnesium	·8022	·4406	,,
Chlorido of Calcium	·5127		,,
Chloride of Copper		trace	,,
Bicarbonate of Lime	·9748	1·4760	,,
Bicarbonate of Magnesia	·2673	·0112	,,
Bicarbonate of Protoxide of Iron	·0029	·0112	,,
Bicarbonate of Protoxide of Manganese	trace	trace	,,
Sulphate of Lime	1·8524	1·3390	,,
Sulphate of Potash		·3344	,,
Sulphate of Strontia	·0052		,,
Sulphate of Baryta		trace	,,
Ammonia	trace	trace	,,
Arseniate of Iron	trace	·0038	,,
Silica	·3200	·4477	,,
	24·4588	22·0858	,,

BAGNÈRES-DE-LUCHON (South of France). Altitude 2000′. Season, May to October.

Contains in 20 oz. about 2 grains of Sulphurets of Iron, Manganese, Sodium. The springs range in temperature from 60° F. to 154° F.; water is clear; has a sulphureous odour; is good in lymphatic and cutaneous affections.

BARÉGES (Hautes-Pyrénées, France). Altitude 4000′. There are nine sulphureous springs. Temperature 86° to 111° F. Season, May to September. Useful in inveterate chronic rheumatism and skin diseases.

Analysis of 16 oz. Troy=7680 grs. Le Tambour Source:—

Sulphuret of Sodium	·360	grains.
Sulphate of Soda	·384	,,
Chloride of Sodium	·307	,,
Silica	·519	,,
Lime	·022	,,
Magnesia	·026	,,
Soda	·039	,,
	1·657	grains.
Gas.		
Nitrogen	·004	c. in.

Imported.

BELLTHAL (Rhenish Prussia, near Coblentz). Altitude 400′. Drunk as a table water.

Contents in 10,000 parts:—

Carbonate of Soda	2·7918
Carbonate of Potash	·6898
Silicate of Soda	·6974
Carbonate of Magnesia	2·5676
Carbonate of Lime	5·9773
Chloride of Sodium	·2738
Sulphate of Soda	·1243
Nitrate of Soda	·0745
Carbonate of Iron	·0198
Carbonate of Ammonia	·0076
Carbonate of Manganese	·0047
Phosphate of Lime	·0015
Alumina	·0026
Free Carbonic Acid	36·410 parts by volume.

Imported.

BERKA (Duchy of Saxo-Weimar).

The sulphureous spring contains 13½ grains of solids in 16 oz. Troy = 7680 grs. For chronic rheumatism, anæmia, and great debility.

Sulphate of Lime	5·5 grains
Carbonate of Lime	4·33 ,,
Sulphate of Soda	1 ,,
Sulphate of Magnesia	2 ,,
Chloride of Calcium	0·7 ,,
Gases.	
Carbonic Acid	3·4 c. inches.
Sulphuretted Hydrogen with Nitrogen	6·4 ,,

The chalybeate spring contains about 22 grains of solids in 16 oz. viz. :—

Sulphate of Lime	13·5 grains.
Carbonate of Lime	3·5 ,,
Chloride of Calcium	0·5 ,,
Chloride of Magnesium	0·5 ,,
Carbonate of Magnesium	0·4 ,,
Sulphate of Magnesia	3·0 ,,
Carbonate of Iron	0·3 ,,

BILIN (Bohemia). Altitude 645′.

Taken for indigestion and acidity of the stomach, and drunk as a table water.

Analysis of 16 oz. Troy = 7680 grs. :—

Carbonate of Soda	23·106 grains.
Carbonate of Lime	3·089 ,,
Carbonate of Magnesia	1·098 ,,
Carbonate of Lithia	·110 ,,
Carbonate of Iron	·080 ,,
Sulphate of Soda	6·350 ,,
Sulphate of Potash	·985 ,,
Chloride of Sodium	2·935 ,,
Phosphate of Alumina	·065 ,,
Silica	·244 ,,
	38·062 ,,
Free Carbonic Acid	15·092 cubic inches.
Carbonic Acid (as bicarbonate)	17·247 ,, ,,

Imported.

BIRMENSTORF (Switzerland). Altitude 1300′. A mild laxative. Dose, ½ to ¾ of a tumblerful half an hour before breakfast. Temp. 50° F.

Analysis of 1,000 parts according to Bolley:—

Sulphate of Potash	·1042
Sulphate of Soda	7·0356
Sulphate of Lime	1·2692
Sulphate of Magnesia	22·0135
Chloride of Magnesium	·4604
Carbonate of Lime	·0133
Carbonate of Magnesia	·0324
Magnesia (crenate of)	·1010
Peroxide of Iron	1·0107
Alumina	·0277
Silica	·0302
	31·0982

Imported.

BIRRESBORN (Rhenish Prussia). Altitude 1100′. A table water, drunk *ad lib.*

Analysis of 1000 parts :—

Bicarbonate of Soda	2·81681
Bicarbonate of Lithia	·003346
Bicarbonate of Lime	·272988
Bicarbonate of Baryta Bicarbonate of Strontia	·000154
Bicarbonate of Magnesia	1·092873
Bicarbonate of Protoxide of Iron	·035116
Bicarbonate of Manganese	·000668
Biborate of Soda	traces.
Sulphate of Potash	·052091
Sulphate of Soda	·135926
Chloride of Sodium	·357620
Bromide of Sodium	·000363
Iodide of Sodium	·000005
Phosphate of Soda	·000228
Nitrate of Soda	traces.
Phosphate of Alumina	traces.
Silicic Acid	·024532
	4·827591
Free Carbonic Acid	2·333967
	7·161558

BOCKLET (near Kissingen). Altitude 620′. Pleasant residence. Tonic, useful in diseases peculiar to females. Carbonic Acid Baths.

Temperature 50° F. *Analysis* of 16 oz. Troy=7680 grs. :—	Ludwig's-quelle. (Ludwig's Spring.)	Schwefel-quelle. (Sulphur Spring.)	Stahl quelle. (Steel Spring.)
Sulphate of Soda	6·25	·25	2·54 grs.
Sulphate of Magnesia	0	0	3·23 ,,
Sulphate of Lime	·50	0	0 ,,
Chloride of Sodium	27·50	·25	6·55 ,,
Chloride of Magnesium	0·75	0	4·43 ,,
Carbonate of Soda	0	·50	0 ,,
Carbonate of Magnesia	1·25	·50	3·36 ,,
Carbonate of Lime	7·25	2·50	6·54 ,,
Carbonate of Iron	·65	·40	·61 ,,
Silica	·50	·10	·22 ,,
Gases.	44·65	4·90	27·48 ,,
Carbonic Acid	31	21·5	39·3
Sulphuretted Hydrogen	0	0·2	0

BONNES (Basses-Pyrénées, France). Altitude 2000′. Air cold and penetrating A sulphureous and saline water, less exciting than Barèges. Imported. Contains in 16 oz. Troy=7680 grs., 5⅓ grains of solids.

BONNES (Basses-Pyrénées).
Increases the natural secretion of the skin and kidneys. Dose, ¼ to ½ a tumbler taken before breakfast with two or three spoonfuls of boiling milk.

Analysis of 1 gallon=70,000 grs. :—

Chloride of Potassium	2·40
Chloride of Sodium	17·59
Sulphate of Sodium	2·86
Silicate of Sodium	5·28
Sulphate of Calcium	11·14
Silica	1·02
Magnesium, Lithium, Nitrates, and Phosphates	traces.
Sulphuretted Hydrogen	1½ cubic inches.

BORCETTE or BURTSCHEID (near Aix-la-Chapelle).

There are two kinds of springs,—the warmer one, Mühlenbadquelle, 171° F., is free from Sulphuretted Hydrogen; the cooler, from 110° to 140°, contains Sulphuretted Hydrogen. Both kinds are used for baths.

BOURBOULE (la) (Puy-de-Dôme, France). Altitude 2600′.

Drunk for diseases arising from impoverished blood, skin diseases, rheumatism, gout, sciatica, &c.

Analysis of one litre "Choussy" Spring:—

Arsenious Acid (Arsenicum ·0075)	·0115	grammes.
Hydrochloric Acid	2·0447	,,
Sulphuric Acid	·1098	,,
Silica	·0420	,,
Oxide of Iron	·0053	,,
Lime	·0490	,,
Magnesia	·0092	,,
Soda	2·6395	,,
Potash	·0731	,,
Lithia	traces	,,
	4·9841	,,
Free Carbonic Acid	·3513	,,
Do. as Carbonates	1·3242	,,
	6·6596	,,

Analysis of one litre "Perrière" Spring:—

Arsenious Acid (Arsenicum ·0070)	·0108	grammes.
Chloride of Sodium	2·8406	,,
Chloride of Potassium	·1623	,,
Chloride of Magnesium	·0320	,,
Bicarbonate of Soda	2·8920	,,
Bicarbonate of Lime	·1905	,,
Sulphate of Soda	·2084	,,
Peroxide of Iron	·0021	,,
Silica	·0200	,,
Alumina	traces	,,
	6·3587	,,
Free Carbonic Acid	·0518	,,
	6·4105	,,

BUDA-PESTH (Hungary). Bitter Aperient Water.

In 16 oz. Troy = 7680 grs.

	Hunyadi Janos.		Royal Hungarian.
	Liebig.	Bunsen.	Prof. Than.
Sulphate of Magnesia	122·8	171·64	138·17 grs.
,, Soda	122·1	173·18	114·43 ,,
,, Potash	·65	·92	2·18 ,,
,, Lime	—	—	11·62 ,,
Chloride of Sodium	9·98	13·05	22·13 ,,
Bicarbonate of Soda	6·11	5·20	13·19 ,,
Carbonate of Soda	—	—	2·09 ,,
Carbonate of Lime	7·16	6·12	,,
Carbonate of Strontia	—	·20	,,
Oxide of Iron and Alumina	·03	·004	·05 ,,
Siliceous Earth	·008	·08	·03 ,,
Carbonic Acid free and combined	4·00	4·0	2·53 ,,
	Imported.		Imported.

BUDA or OFEN (opposito Pesth, Hungary). Altitude 461′.

Used externally. Efficacious in chronic gout, rheumatism, eczema, and psoriasis. Internally, in gastric catarrh, gouty diathesis, ulceration of the stomach, obstinate constipation. There are three swimming baths.

Sigmundi's Analysis of 16 oz. of tho Trinkquelle :—

Temperaturo, 141·5° Fahr.

Sulphato of Soda	2·95 grains.
Chloride of Sodium	·82 ,,
Carbonate of Soda	2·02 ,,
Carbonate of Magnesia	0·46 ,,
Carbonate of Lime	3·12 ,,
Silica	0·69 ,,
Alumina	0·18 ,,
	10·24 grains.
Gases.	
Carbonic Acid	5·72 c. inches.
Sulphuretted Hydrogen	traces.

BUSSANG (Vosges, France). A ferruginous and alkaline water, mild, laxative, for weak digestion. Dose Half-a-pint half an hour before meals.

Analysis of 1 Litre.

Carbonate of Soda	·789 grammes.
Carbonate of Lime	·340 ,,
Carbonate of Magnesia	·150 ,,
Carbonate of Strontia	traces
Carbonate of Iron	·017 ,,
Crenate of Iron, Manganese, and traces of Chloride of Sodium	·078 ,,
Sulphate of Soda and Lime	·110 ,,
Silicate of Soda Silicate of Lime Silicate of Alumina	·002 ,,
	1·486 ,,
Free Carbonic Acid	·41 Litre.

Imported.

CARLSBAD (Bohemia). Altitude 1200′. Season, June to September.

Drunk for obstinate constipation, affections of liver, gout, rheumatism, and diabetes.

Göttl's Analysis of 16 oz. Troy = 7680 grs.:—

	Sprudel. 162° F.	Schloss-brunnen. 122° F.	Wolf's Analysis. Markt-Brunnen. 119·3° F.
Sulphato of Soda	19·9606	10·145	17·9919 grs.
Carbonate of Soda	9·0624	8·555	9·4553 ,,
Chloride of Sodium	8·7245	8·463	8·3298 ,,
Sulphate of Potash	·3696	11·558	1·9603 ,,
Carbonate of Lime	2·0198	2·419	2·1418 ,,
Carbonate of Magnesia	·3996	·299	1·8987 ,,
Carbonate of Iron	·0307	·023	·0890 ,,
Phosphate of Alumina	·2150	·031	0 ,,
Silica	1·0520	·43	1·3271 ,,
Carbonate of Lithia	0	0	·0100 ,,
Carbonate of Strontia	0		·0377 ,,
Carbonate of Manganese	0	0	·0185 ,,
Iodide of Sodium	0	0	·0209 ,,
Bromide of Sodium	0		·0133 ,,
Phosphate of Soda	0	0	·0160 ,,
Fluoride of Sodium and Silicium	0	0	1·4288 ,,
Alumina and Peroxide of Iron	0	0	·0251 ,,
	41·8340	41·922	44·7642 grs.
Gases.			
Carbonic Acid	7·8033	0	11·7602
Nitrogen	·0318	0	·0530

Imported.

GIESSHÜBLER, Temperature 7·2 to 7·5 R=45·° to 45·5° F.

Liebig's Analysis of 16 oz. Troy=7680 grs. :—

Bicarbonate of Soda	9·6944532
Chloride of Sodium	0·3070264
Sulphate of Soda	0·3761548
,, Potash	0·5197317
Bicarbonate of Lime	2·7794533
,, Magnesia	2·0694743
,, Protoxide of Iron	0·0468486
,, ,, Manganese	0·0375306
Silicic Acid	0·4456797
Bicarbonate of Lithia	0·0714685
Alumina	0·0201600
Organic Matter	0·0020474
Total of Solid Constituents	16·3700285
Real free Carbonic Acid Gas	20·6317593
Total Constituents	37·0017878

Imported and drunk at meals.

CAUTERET (Hautes-Pyrénées). Altitude 3000′. Climate mild and sheltered. Temperature of Sulphur baths 98° to 131° F. Season, June to September. Rich in iodine, and more exciting than Baréges. Imported.

CHALLES (Savoy). Sulphureous, milder than Baréges. Imported.

CHARLOTTENBRUNNEN (Silesia). Altitude 1437′. Sheltered. Climate mild and bracing.

Excellent arrangements for whey-cure. Is resorted to for chronic pulmonary catarrh and atonic dyspepsia.

Charlottenquelle (a mild chalybeate) contains 5½ grains of solids in 16 oz. Troy=7680 grs. Among them—

Carbonate of Iron	0·2 grains.
Carbonate of Soda	1·5 ,,
Carbonate of Lime	2·3 ,,
Carbonate of Magnesia	0·5 ,,
Carbonic Acid	18 c. in.

Elisenquelle (acidulous spring) contains 4 grains of solids in 16 oz. Amongst them—

Iron	traces.
Carbonic Acid	17¼ c. in.

CHATELDON (France). Imported. } Are gaseous drinking-waters.
CONDILLAC (France). Imported. }

CONTREXVILLE (Vosges, France). Altitude 1000′. Climate severe. Temperature of water 53° F. Season, 20th May to 15th September. Resorted to for affections of the urinary organs.

Analysis of the "Pavilion Spring," by Debray :—

Bicarbonate of Lime	·402 grains.
Bicarbonate of Magnesia	·035 ,,
Bicarbonate of Iron	·007 ,,
Bicarbonate of Lithia	·004 ,,
Sulphate of Lime	1·163 ,,
Sulphate of Soda	·236 ,,
Sulphate of Magnesia	·030 ,,
Silica	·015 ,,
Chloride of Potassium	·006 ,,
Chloride of Sodium	·004 ,,
Fluoride of Calcium	traces.
Arsenic	traces.
	2·304 ,,
Free Carbonic Acid	·080 ,,

Imported.

DRIBURG (Westphalia). Altitude 583′. Mean temperature 48·5° F. Rather strong chalybeate. Temperature 51° F. Contains 40 grains in 16 oz., chiefly Bicarbonate of Lime, Sulphates of Lime, Magnesia and Soda, and 17 grains of Carbonic Acid; the quantity of Iron not stated.

EILSEN (Northern Germany). Altitude 250′. Sulphureous springs.

Useful in gout, rheumatism, and paralysis.

Dumesnil's Analysis in 16 oz. Troy=7680 grs.

Temperature 59° F.	Georgen-brunnen.	Julianen-quelle.	
Sulphate of Soda	5·8233	5·0873	grains.
Sulphate of Lime	15·2840	17·1933	,,
Sulphate of Magnesia	5·0120	4·4933	,,
Carbonate of Lime	2·3333	1·5413	,,
Carbonate of Magnesia	·1620	·1866	,,
Chloride of Magnesium	1·2940	2·0500	,,
Phosphate of Lime	·0067	·0080	,,
Peroxide of Iron	·0066	·0080	,,
Silica	traces	·0746	,,
	30·0051	30·6424	grains.
Gases.			
Sulphuretted Hydrogen	1·5740	2·096	c. in.
Carbonic Acid	1·4480	2·151	,,
Nitrogen	·3166	·374	,,
Carburetted Hydrogen	·0833	·110	,,
Oxygen	·0786	·080	,,
	3·5005	4·811	c. in.

EMS (on the Lahn, Germany). Altitude 291′. Air soft and balmy. Temperature steady.

Most useful in diseases of mucous membranes and uterine derangements, especially in barrenness, sluggish liver, and irritative dyspepsia.

Fresenius's Analysis of 16 oz. Troy=7680 grs.:—

	Krähnchen.	Kessel-brunnen.	Fürsten-brunnen.	Neue-quelle.	
Temperature	85° F.	115° F.	95° F.	117° F.	
Bicarbonate of Soda	14·8376	15·1974	15·6031	15·93	grs.
Chloride of Sodium	7·0841	7·7705	7·5509	7·27	,,
Sulphate of Soda	·1377	·0061	·1550	·10	,,
Sulphate of Potash	·3286	·3937	·3014	·43	,,
Bicarbonate of Lime	1·7246	1·8129	1·7760	1·78	,,
Bicarbonate of Magnesia	1·5051	1·4360	1·5357	1·54	,,
Bicarbonate of Iron	·0166	·0278	·0203	·03	,,
Bicarbonate of Manganese	·0072	·0047	·0060	·01	,,
Bicarbonate of Baryta Bicarbonate of Strontia	·0011	·0036	·0021	·002	,, ,,
Phosphate of Alumina	·0032	·0096	·0033	·009	,,
Silica	·3797	·3648	·3777	·37	,,
Total	26·0259	27·0272	27·3322	27·67	grs.
Carbonic Acid	8·3249	6·7886	6·9275	6·52	c. in.

Imported.

ENGHIEN (Paris). Altitude 52′. A valuable sulphurous water. Has five principal sources, Cotte, Deyeux, Péligot, Boulard, De la Pêcherie. Temperature from 50° to 57° F. The climate is not equal to the Pyrenees. Open from March to October. Imported.

FACHINGEN (Nassau, on the Lahn). Altitude 337′.

To correct acid in the stomach, and useful in diseases of kidney and bladder.

Fresenius's Analysis of 16 oz. Troy = 7680 grs. Temperature, 50° F.

Bicarbonate of Soda	28·0883	grains.
Bicarbonate of Lime	2·8960	,,
Bicarbonate of Magnesia	2·2912	,,
Bicarbonate of Iron	·1103	,,
Bicarbonate of Strontia	·0008	,,
Bicarbonate of Lithia	·0006	,,
Sulphate of Soda	·1372	,,
Phosphate of Soda	·0506	,,
Phosphate of Lithia	·0002	,,
Phosphate of Lime	·0004	,,
Phosphate of Alumina	·0003	,,
Phosphate of Silica	·2610	,,
Fluoride of Calcium	·0027	,,
Chloride of Sodium	4·5574	,,
Chloride of Calcium	·0034	,,
	38·3918	grains.
Gases.		
Carbonic Acid	32·9750	c. in.
Nitrogen	·0256	,,
	33·0006	c. in.

Imported.

FRANZENSBAD (Bohemia). Altitude 1569′. Mean annual temperature 45° F.

For drinking and for baths. Highly successful in all forms of abdominal plethora, anæmia, and chlorosis. The moor-bath chalybeate for rheumatism and gout.

Analysis of 16 oz. :—

	Wiesenquelle.	Sabequelle.	
Temperature, Fahr.	51°	52·6°	
Carbonate of Iron	·376	·016	grains.
Carbonate of Manganese	·093	·004	,,
Sulphate of Soda	25·223	17·933	,,
Sulphate of Potash	·1362	0	,,
Phosphate of Soda	·062	0	,,
Chloride of Sodium	9.346	9·216	,,
Bromide of Sodium Iodide of Sodium	traces	0	
Carbonate of Magnesia	1·190	·132	,,
Carbonate of Lithia	·063	0	,,
Carbonate of Lime	1·291	1·607	,,
Carbonate of Strontia	·049	·003	,,
Phosphate of Lime and Alumina	·007	·004	,,
Silica	·056	·333	,,
	45·108	38·568	grains.
Carbonic Acid	45·107	26·89	c. in.

	Franzens-quelle.	Kalte-Sprudel.	Louisen-quelle.	
Temperature, Fahr.	52·9°	51°	53·9°	
Carbonate of Iron	·23	·200	·328	grains.
Carbonate of Manganese	·04	·004	0	,,
Chloride of Sodium	9·23	8·600	6·766	,,
Sulphate of Soda	24·50	26·930	21·416	,,
Carbonate of Soda	5·17	7·173	5·498	,,
Carbonate of Lime	1·82	1·600	1·600	,,
Carbonate of Strontia	·003	·001	0	,,
Carbonate of Magnesia	·67	·013	0	,,
Carbonate of Lithia	·08	0	0	,,
Phosphate of Lime and Magnesia	·032	·028	0	,,
Silica	·47	·56	·228	,,
	42·18	44·606	35·836	grains.
Gas.				
Carbonic Acid	40·84	39·4	32·53	c. inches.

FRIEDRICHSHALL (Saxe-Meiningen, near Hildburghausen). Situated in a charming valley. Altitude 920′. Bitter water. Alterative and aperient; used in diseases of the stomach, liver, and urinary organs.

Liebig's Analysis in 16 oz. Troy = 7680 grains:—

Sulphate of Soda	46·51	grains.
Sulphate of Magnesia	39·55	,,
Chloride of Sodium	61·10	,,
Chloride of Magnesium	30·25	,,
Bromide of Magnesium	·37	,,
Sulphate of Potash	1·52	,,
Sulphate of Lime	10·34	,,
Carbonate of Lime	·11	,,
Carbonate of Magnesia	1·16	,,
Silica	·33	,,
	190·25	grains.
Carbonic Acid	5·32	c. in

Imported.

GASTEIN (Austria). Altitude 3051′, surrounded by mountains. Mean summer temperature, 59° F. Specially useful in nervous exhaustion.

Chiefly used for bathing. Season July and August.

Wolf's Analysis of 16 oz. Troy = 7680 grs.:—

Temperature, from 95° to 118° Fahr.

Sulphate of Soda	1·51	grains.
Chloride of Sodium	·36	,,
Carbonate of Lime	·36	,,
Silica	·24	,,
Carbonate of Soda	·04	,,
Phosphate of Alumina	·04	,,
Carbonate of Iron	·05	,,
Carbonate of Manganese	·02	,,
Sulphate of Potash	·01	,,
Carbonate of Magnesia	·02	,,
Fluoride of Calcium	traces	
Strontia	traces	
Organic Matter	traces	
	2·68	grains.
Gases.		
Nitrogen	69·112	per cent.
Oxygen	30·888	,,

GEROLSTEIN (Rhenish Prussia). Altitude 1200′.

Analysis of 1 litre :—

Carbonate of Soda	·820436	grammes.
„ Lithia	·001030	„
„ Lime	·571430	„
„ Baryta	·000089	„
„ Magnesia	·456624	„
„ Iron	·000316	„
„ Manganese	·000167	„
Sulphate of Potash	·002868	„
„ Soda	·102627	„
Chloride of Sodium	·251034	„
Bromide of Sodium	·000210	„
Iodide of Sodium	·000002	„
Phosphate of Soda	·000221	„
Silicic Acid	·083204	„
	2·290258	„
Carbonic Acid in combination with Carbonates as Bicarbonates.	·831988	„

Imported and drunk as a table water.

HOMBURG (Central Germany). Altitude 600′. Air pure and bracing.

The springs are laxative, slightly tonic, and useful in plethora, dyspepsia, hysteria, hypochondria, etc. Source Louis, discovered in 1855, contains iron and sulphur, 32 grains of salts, and 38 cubic inches of carbonic acid. The water is also used for baths. Ludwigs-brunnen is a pleasant drinking water. Both the Kaiser-brunnen and the Stahl-brunnen have a chalybeate taste. Open all the year. Season, May to September.

Liebig and Hofmann's Analysis of 16 oz. Troy = 7680 grs. :—

	Elizabeth-brunnen.	Kaiser-brunnen.	Ludwigs-brunnen.	Stahl-brunnen.	
Temperature, Fahr.	50°	52·25°	53·3°	50°	
Chloride of Sodium	79·15	104·94	47·96	79·86	grs.
Chloride of Potassium	0	·28	1·71	·18	„
Chloride of Magnesium	7·79	8·52	3·06	5·33	„
Chloride of Calcium	0	17·50	7·28	10·67	„
Carbonate of Iron	·46	·53	·42	·94	„
Sulphate of Lime	0	·17	·15	·15	„
Carbonate of Lime	10·99	·68	5·74	7·53	„
Carbonate of Magnesia	2·01	0	·10	0	„
Sulphate of Soda	·38	0	0	0	„
Silica	·32	·09	·20	·31	„
	103·87	132·71	66·63	104·97	grs.
Free Carbonic Acid	48·64	109·16	43·59	46·91	c. in.

Imported. Also the Salt evaporated to dryness imported.

HUNYADI-JANOS (*See* BUDA-PESTH).

ISCHIA (South Italy). Principal spring, Gurgitello. Temperature 158° F. Contains in 16 oz. Troy = 7680 grs., 135 grains, chiefly chloride of sodium, carbonate of soda, and carbonic acid. Serviceable in such cases as hot baths are usually employed, rheumatism, paralysis, skin disease, etc. Season, in the spring and summer. Whey cure.

Saline springs and sand baths. Temperature 108° to 133° F. Patients are immersed in these for rheumatism, gout, palsy, and scrofula.

ISCHL (Austria). Altitude 1400′. Air peculiarly soft and refreshing, and is its chief attraction. The brine from the salt-works, when diluted, is used for baths. Season, May to end of September.

KISSINGEN (Bavaria). Altitude 800′. Climate mild, dry, and salubrious. Pleasing and healthful place of residence.

The waters are laxative, and used in indigestion, obstructions of the liver, morbid conditions of the kidneys, giving tone to the organs. The season lasts four months, May to September. There is also a Kissingen bitterwasser, which closely resembles Friedrichshall.

Liebig's Analysis of 16 oz. Troy = 7680 grs. :—

	Rakoczi.	Pandur.	Maxbrunnen.
Temperature, Fahr.	51°	51°	49°
Chloride of Sodium . . .	44·71	42·39	17·52 grains.
Chloride of Potassium . .	2·20	1·85	1·14 ,,
Chloride of Lithium . . .	·15	·12	·004 ,,
Chloride of Magnesium . .	2·33	1·62	·51 ,,
Bromide of Sodium . . .	·06	·05	0 ,,
Iodide of Sodium	traces	traces	0 ,,
Nitrate of Soda	·07	·02	·65 ,,
Sulphate of Magnesia . .	4·50	4·59	0 ,,
Sulphate of Lime	2·99	2·30	1·06 ,,
Phosphate of Lime . . .	·04	·04	·03 ,,
Carbonate of Lime . . .	8·14	7·79	4·62 ,,
Carbonate of Iron	·24	·20	0 ,,
Silica	·09	·03	·07 ,,
	65·70	61·30	28·10 grains.
Gases.			
Carbonic Acid	41·77	48·17	41·85 c. in.
Ammonia	·007	·029	0 ,,

Imported.

KOSEN (Saxony, in a valley sheltered from the N. and N.E. winds). Baths. Useful in scrofulosis.

Analysis of 16 oz. Troy = 7680 grs. :— Temperature, Fahr. 65°.

Chloride of Sodium	335·0 grains.
Sulphate of Soda	2·2 ,,
Sulphate of Potash	2·4 ,,
Sulphate of Lime	33·5 ,,
Carbonate of Lime	1·0 ,,
Sulphate of Magnesia	7·9 ,,
Oxide of Iron	0·1 ,,
	382·1 grains.

KŒNIGSDORFF-JASTRZEMB (Upper Silesia). Not much known. Drunk for glandular enlargements.

Analysis of 16 oz. Troy = 7680 grs. :—

Chloride of Sodium	87·9 grains.
Chloride of Potassium	0·5 ,,
Chloride of Calcium	4·25 ,,
Chloride of Magnesium	2·6 ,,
Iodide of Magnesium	·04 ,,
Bromide of Magnesium	·22 ,,
Carbonate of Lime	·33 ,,
Carbonate of Magnesia	·01 ,,
Carbonate of Iron	·03 ,,
Sulphate of Lime	·08 ,,
	95·96 grains

KRANKENHEIL (Bavaria). Altitude 2467′. Climate pure, bracing, and mild.

Useful in scrofulous diseases of the skin.

Analysis of 16 oz. Troy = 7680 grs. :—

	Johann-Georgen-quelle.	Bernhard-quelle.	Anna-quelle.	
Sulphate of Potash	·09	·07	·15	grains.
Sulphate of Soda	·09	·03	2·25	,,
Chloride of Sodium	1·79	2·27	·23	,,
Iodide of Sodium	·01	·01	—	,,
Bicarbonate of Soda	2·48	2·56	1·49	,,
Bicarbonate of Lime	·70	·78	1·91	,,
Bicarbonate of Magnesia . .	·22	·22	—	,,
Bicarbonate of Iron	—	—	—	,,
Bicarbonate of Manganese . .	—	—	—	,,
Silicate of Alumina	·02	·01	1·84	,,
Silicic Acid	·06	·07	·03	,,
	5·50	5·07	7·98	grains.
Gases.				
Free Carbonic Acid	·32	·23	·63	c. in.
Sulphuretted Hydrogen . . .	·05	·07	·23	,,

KREUZNACH (Rhenish Prussia). Altitude 285′. Climate warm, clear, and dry.

Kreuznach Salt: the Mother Lye of Kreuznach, which remains after the salt has crystallized out, contains 2484 grains of solids in the 16 oz.

A strongly iodized water, powerfully tonic and stimulant to the lymphatic system, used for constitutional syphilis, diseases of the skin, rheumatism, paralysis, scrofula, tuberculosis, and leucorrhœa; used also for baths. Season from June to September.

Analysis of 16 oz. Troy = 7680 grs. :—

	Elisen-quelle.	Oranien-quelle.	Brine-Spring.	
Temperature, Fahr.	54·5°	54·5°		
Chloride of Sodium	72·883	108·705	1311·89	grains.
Chloride of Calcium	13·389	22·749	241·00	,,
Chloride of Magnesium . . .	4·071	0	73·22	,,
Chloride of Potassium . . .	·624	·460	11·23	,,
Chloride of Lithium	·613	0	0	,,
Bromide of Magnesium . . .	·278	1·780	5·00	,,
Iodide of Magnesium . . .	·035	·012	·63	,,
Carbonate of Lime	1·693	·255	0	,,
Carbonate of Magnesia . . .	·106	·130	0	,,
Carbonate of Iron	0	·356	0	,,
Silica	·129	·999	0	,,
Phosphate of Alumina . . .	·025	·095	0	,,
	93·846	135·541	1642·97	grains.

The water, the salt, and the brine are all imported.

KRONTHAL (Nassau). Altitude 512′. In a valley open to the south. Climate very mild.

Resorted to by persons suffering from bronchitis or affections of the lungs.

Löwe's Analysis of 16 oz. Troy = 7680 grs. :—

	Stahlquelle.	Wilhelmsquelle.
Temperature, Fahr.	57°	61°
Chloride of Sodium	22·27	27·20 grains.
Chloride of Potassium	·77	·67 ,,
Chloride of Ammonium	·07	·04 ,,
Chloride of Calcium	·07	·16 ,,
Carbonate of Lime	4·17	5·10 ,,
Sulphate of Lime	·21	·23 ,,
Carbonate of Magnesia	·72	·72 ,,
Carbonate of Iron	·05	·10 ,,
Carbonate of Manganese	·02	·01 ,,
Silica	·66	·55 ,,
Organic Matter	·11	·01 ,,
	29·16	35·26 grains.
Carbonic Acid	40·0	33·0 c. in.

LABASSÈRE (Hautes-Pyrénées). Altitude 1800′.

Drunk for bronchial and laryngeal catarrh.

Containing 3·68 grains of solids in 16 oz. Troy = 7680 grs., viz. :—

Temperature, 54°—57° Fahr.

Sulphuret of Sodium	·35 grains.
Chloride of Sodium	1·58 ,,
Chloride of Potassium	·02 ,,
Carbonate of Soda	·17 ,,
Silicate of Lime	·33 ,,
Silicate of Magnesia	·07 ,,
Alum (in excess)	·01 ,,
Iodine	traces.
Organic Matter	1·11 ,,

LANDECK (Prussian Silesia). Altitude 1398′. Climate bracing.

Vapour inhaled for bronchial catarrh. Resembles in purity Buxton and Clifton. There are moor-baths for rheumatism, etc.

Fischer's Analysis of 16 oz. Troy = 7680 grs. :—

	Wiesenquelle. 81° F.	Georgenbrunnen. 83° F.
Sulphate of Soda	·542	·248 grain.
Bicarbonate of Soda	·545	0 ,,
Chloride of Potassium	0	·165 ,,
Chloride of Sodium	·005	0 ,,
Chloride of Calcium	·064	0 ,,
Crenate of Soda	0	·286 ,,
Sulphate of Lime	0	·008 ,,
Carbonate of Lime	·075	·081 ,,
Carbonate of Magnesia	·005	·009 ,,
Phosphate of Alumina, Iron, and Manganese	0	·012 ,,
Silica	·327	·271 ,,
	1·563	1·122 grain.
Gases.		
Sulphuretted Hydrogen	·015	traces c. in.
Carbonic Acid	·172	·26
Nitrogen	0	·62

LANGENBRÜCKEN (Baden). Altitude 440′. In a valley, with luxuriant foliage. Climate mild. Season, spring to autumn.

Useful in chronic catarrh of the bladder, rheumatism, and bronchial irritation.

TRINKQUELLE. Temperature, 52° Fahr. Contains 3¾ grains of solids in 16 oz. Troy = 7680 grs. viz.:—

Sulphate of Soda	·25	grains.
Sulphate of Lime	·5	,,
Sulphate of Potash	·15	,,
Chloride of Sodium	·08	,,
Carbonate of Lime	2·12	,,
Carbonate of Magnesia	·35	,,
Carbonate of Iron	·07	,,
Silica	·01	,,

Gases.

Sulphuretted Hydrogen	0·10	c. in.
Carbonic Acid	27·98	,,

WALDQUELLE. Temperature, 57° F. Contains 11¾ grains of solids in 16 oz. Troy = 7680 grs. viz.:—

Sulphate of Soda	1·63	grains.
Sulphate of Magnesia	3·88	,,
Sulphate of Lime	2·41	,,
Phosphate of Lime	·16	,,
Sulphate of Potash	·15	,,
Sulphuret of Calcium	·14	,,
Chloride of Potassium	·10	,,
Carbonate of Lime	1·81	,,
Carbonate of Magnesia	1·84	,,
Sulphuret of Iron	·03	,,
Alumina	·03	,,
Silica	·13	,,

Gases.

Sulphuretted Hydrogen	·15	c. in.
Carbonic Acid	3·09	,,

LEUK (Switzerland). Altitude, 4275′, at the foot of the Gemmi. Climate rough and bracing.

Both sexes, in suitable dresses, promenade in these baths. They are useful in skin diseases, chronic swellings of the glands, in catarrh, and have also a diuretic action.

Brunner's Analysis of 16 oz. Troy = 7680 grs., of the Lorenzquelle:—

Temperature, 124° F.

Sulphate of Lime	12·712	grains.
Sulphate of Magnesia	1·991	,,
Sulphate of Soda	·509	,,
Sulphate of Strontia	·031	,,
Chloride of Sodium	·055	,,
Chloride of Potassium	·02	,,
Chloride of Magnesium	·027	,,
Carbonate of Lime	·357	,,
Carbonate of Magnesia	·002	,,
Carbonate of Iron	·024	,,
Silica	·102	,,
	15·830	grains.

Gases.

Carbonic Acid	·267	c. in.
Oxygen	·192	,,
Nitrogen	·347	,,

LEVICO (Austrian Tyrol). Altitude 4500′.

It has two arsenical springs, one being about ten times stronger than the other. Strong Levico contains about $\frac{1}{13}$ grain of Arsenious Acid and 33 grains of Iron Salts per pint.

Ludwig von Barth's Analyses.

In one litre of Levico *strong*.

Arsenious Acid	·0086879	grammes.
Chloride of Sodium	·0001781	,,
Proto-sulphate of Iron	2·5675198	,,
Per-sulphate of Iron	1·3019720	,,
Sulphate of Aluminium	·6239873	,,
Sulphate of Manganese	·0002418	,,
Sulphate of Calcium	·3724983	,,
Sulphate of Magnesium	·3833451	,,
Sulphate of Potassium	·0037031	,,
Sulphate of Sodium	·0312031	,,
Sulphate of Ammonium	·0032270	,,
Silicic Acid	·0310384	,,
Carbon from Organic matter	·0097825	,,

In one litre of Levico *mild*.

Arsenious Acid	·00095	grammes.
Chloride of Sodium	·00003	,,
Proto-sulphate of Iron	·66278	,,
Per-sulphate of Iron	·27272	,,
Sulphate of Aluminium	·15919	,,
Sulphate of Copper	·00520	,,
Proto-carbonate of Iron	·01558	,,
Sulphate of Manganese	·00003	,,
Sulphate of Magnesium	·23648	,,
Sulphate of Calcium	·32477	,,
Sulphate of Sodium	·01579	,,
Sulphate of Potassium	·00099	,,
Sulphate of Ammonium	·00062	,,
Silicic Acid	·02293	,,

LIPPIK (Slavonia).

Useful in hysteria.

KLEINBADQUELLE contains 20 grains of solids in 16 oz. Troy = 7680 grs., viz. :—

Temperature 111° F.

Sulphate of Soda	5·25	grains.
Chloride of Sodium	4·8	,,
Chloride of Calcium	·75	,,
Iodide of Calcium	·2	,,
Carbonate of Soda	9·5	,,
Carbonate of Magnesia	·75	,,
Carbonate of Lime	1·33	,,
Phosphate of Alumina	·02	,,
Silica	·08	,,

Gases.

Carbonic Acid	28·5	per cent.
Nitrogen	71·4	,,

LIPPSPRINGE (Prussian Westphalia). Altitude 378′, having beautiful walks for exercise. Climate mild, calming, and equable.

Useful in bronchial irritation and incipient tuberculosis. Season, June to August.

ARMINIUSQUELLE, in 16 oz. Troy = 7680 grs. are:—

	Temperature 70° F.	
Sulphate of Lime	4·25	grains.
Carbonate of Lime	5·27	,,
Sulphate of Soda	5·20	,,
Bicarbonate of Soda	1·60	,,
Sulphate of Magnesia	·80	,,
Carbonate of Magnesia	·60	,,
Carbonate of Iron	·14	,,
Chloride of Sodium	·86	,,
Chloride of Magnesium	·80	,,
Iodides	traces.	
	19·52	grains.
Gases.		
Carbonic Acid	16·17	c. in.
Nitrogen	4·46	,,
Oxygen	·55	,,
	21·12	c. in.

LUCCA (Central Italy). Situate on the slope of a hill, surrounded with shady trees. Climate warm.

Employed externally and internally for skin diseases and chronic rheumatism. Season, June, July, and August.

Giulii's Analysis of 16 oz. Troy = 7680 grs. of thermal spring:—

	Temperature, 116° F.	
Sulphate of Lime	5·82	grains.
Carbonate of Lime	·39	,,
Carbonate of Magnesia	·06	,,
Chloride of Sodium	1·28	,,
Chloride of Magnesium	·32	,,
Alumina	·32	,,
Sulphate of Magnesia	1·18	,,
	9·37	grains.

LUHATSCHOWITZ (Moravia). Altitude 1600′. Climate mild but moist.

Useful in chronic bronchial, gastric, uterine, and vaginal catarrh, especially if combined with scrofulosis; in congested liver and hæmorrhoids, arising from sedentary habits.

	Vincenz-brunnen.	Amand-brunnen.	Johann-brunnen.	Luisen-quelle.	Bade-wasser.	
Temperature, Fahr.	47·75°	45·7°	45·7°	48·6°		
Chloride of Potassium	1·79	1·59	2·14	1·61	1·85	grains.
Chloride of Sodium	23·35	25·75	27·88	33·47	20·87	,,
Bromide of Sodium	·25	·10	·07	·08	·11	,,
Iodide of Sodium	·13	·12	·17	·18	·35	,,
Carbonate of Soda	23·26	36·03	44·21	43·21	24·13	,,
Carbonate of Lithia	0	·01	·01	·01	0	,,
Carbonate of Magnesia	·42	·56	·55	·51	·42	,,
Carbonate of Baryta	·07	·06	·04	·06	0	,,
Carbonate of Lime	4·63	4·81	4·89	4·40	4·79	,,
Carbonate of Strontia	·09	·11	·07	·12	0	,,
Carbonate of Iron	·11	·13	·09	·18	·15	,,
Silica	·39	·10	·41	·47	·14	,,
	54·85	69·5	80·7	84·4	59·7	grains.
Carbonic Acid	50·0	29·0	16·0	27·6	28·0	c. in.

MARIENBAD (Bohemia). Altitude 1900′. Air dry and pure. Season, May to September.

Springs are drunk as laxatives, and are useful in abdominal enlargement, gravel, gout, and derangement of the digestive organs. Mud-baths are applied to stimulate the skin, and to remove glandular swellings.

In 16 oz. Troy = 7680 grs. :—

	Kreuz-brunnen.	Ferdinand-brunnen.	Wald-quelle.	Wiesen-quelle.	Marien-quelle.	
Temperature, Fahr.	53·3°		43·25°	52°–54°		
Sulphate of Soda . . .	36·269	38·766	5·228	·883	·353	grs.
Bicarbonate of Soda . .	12·394	13·999	5·107	·704	0	,,
Chloride of Sodium . .	11·166	15·397	2·116	·369	·048	,,
Sulphate of Potash . .	·449	·499	1·495	0	0	,,
Bicarbonate of Lithia .	·077	·110	·009	0	0	,,
Bicarbonate of Lime . .	6·630	6·021	2·725	6·516	·436	,,
Bicarbonate of Strontia .	·017	·008	0	0	0	,,
Bicarbonate of Magnesia .	5·399	5·299	0	4·373	·061	,,
Bicarbonate of Iron . .	·482	·653	·187	·373	·035	,,
Bicarbonate of Manganese	·053	·166	·035	·161	0	,,
Phosphate of Alumina .	·054	·014	·011	0	0	,,
Phosphate of Lime . . .	·018	·015	0	0	0	,,
Silica	·079	·741	·507	·691	·189	,,
	73·736	81·515	20·091	14·070	1·197	grs.
Carbonic Acid	7·424	14·800	13·509	12·828	9·056	c. in.

Imported.

	Carolinen-brunnen.	Ambrosius-brunnen.	
Temperature, Fahr.	50°	50°	
Sulphate of Soda	2·79	1·86	grains.
Chloride of Sodium	·82	1·64	,,
Carbonate of Soda	·20	1·66	,,
Carbonate of Lime	3·66	2·89	,,
Carbonate of Magnesia	3·94	2·72	,,
Carbonate of Iron	·44	·34	,,
Silica	·46	·48	,,
Extractive Substance	·38	0	,,
Carbonic Acid	15·43	12·9	c. in.

MEINBERG (Germany). Altitude 634′. Situated in a charming fertile plain.

These waters are generally tonic, and good in facial neuralgia, relaxed condition of system, whether cutaneous or otherwise.

In 16 oz. Troy = 7680 grs. are contained as follows :—

	Trink-quelle.	Neu-brunnen.	Quelle im Stern.	Schwefel-quelle.	Kochsalz-quelle.	Acidulous Spring.	
Temperature.				61° F			
Sulphate of Soda . . .	1·15	4·51	1·34	5·84	11·01	0	grs.
Sulphate of Magnesia .	1·14	2·52	3·67	1·73	0	0·04	,,
Sulphate of Lime . .	0·28	3·45	15·16	8·33	13·46	0·18	,,
Chloride of Sodium . .	0	0	0	0	40·95	0·07	,,
Chloride of Magnesia .	0·81	0·98	0·24	1·03	6·31	0·14	,,
Carbonate of Lime . .	1·45	2·65	1·17	2·14	6·03	5·02	,,
Carbonate of Magnesia .	0·15	0·24	0·17	0·17	0·51	2·04	,,
Carbonate of Iron . .	0·08	0·07	0·01	0·008	0·07	0·005	,,
Silica	0·06	0·25	0·08	0·12	0·05	0·05	,,
Extractive Substance .	0·57	0	0	0	0	0	,,
	5·96	14·73	23·36	19·48	73·44	7·57	,,
Gases.							
Carbonic Acid	34·36	0	1·83	2·12	9·74	18·49	c. in.
Sulphuretted Hydrogen	0	0	0	0·55	0	0	,,
Nitrogen	0·14	0	0	0	0	0	,,

MERGENTHEIM (Würtemburg). Altitude 591′. Charming situation. Climate mild. Mean annual temperature 51° F., mean summer temperature 64° F.

The concentrated bitter-water contains 235 grains in the 16 oz. Troy = 7680 grs. The water is used internally and externally in biliary obstructions, hæmorrhoids, and lithiasis.

The "Quelle im Carlsbad" spring contains about 107 grains of solids in 16 oz. Troy = 7680 grs. viz.:—

Chloride of Sodium	51·25	grains.
Chloride of Potassium	·78	„
Chloride of Lithium	·01	„
Bromide of Sodium	·07	„
Sulphate of Soda	21·89	„
Sulphate of Magnesia	15·88	„
Sulphate of Lime	9·86	„
Carbonate of Magnesia	1·40	„
Carbonate of Lime	5·45	„
Carbonate of Iron	·05	„
Silica	·45	„
	107·16	grains.
Gases.		
Carbonic Acid	7·5	c. in.
Nitrogen	18·0	„

MONDORF (Luxembourg). Altitude 2278′. Surrounded by beautiful shady walks.

Extremely useful in hyperæmic conditions of the mucous membrane of the respiratory or intestinal functions, especially in leuco-phlegmatic anæmic individuals.

There is an artesian well here, 2278 feet deep, and the water out of it is 108·5° F.

Kirchhoff's Analysis of 16 oz. Troy = 7680 grs.:—

Temperature, 77° Fahr.

Chloride of Sodium	66·98	grains.
Chloride of Calcium	24·31	„
Chloride of Potassium	1·58	„
Chloride of Magnesium	3·25	„
Bromide of Magnesium	·76	„
Sulphate of Lime	12·61	„
Carbonate of Magnesia	·05	„
Carbonate of Iron	·22	„
Silica	·05	„
Arsenic Acid	·001	„
	109·911	grains.
Gases.		
Free Carbonic Acid	1·06	c. in.
Nitrogen	·47	„

NENNDORF (Prussian Westphalia). Environs charming.

Used for drinking and for baths, to increase the tone of the skin. Gas, douche, and mud baths are employed for gout and rheumatism, etc. Brine baths are also employed. Season, June to tem.

In 16 oz. Troy = 7680 grs.:—

Temperature, 52° F.	Quelle unter dem Gewölbe.	Trinkbrunnen.	Badequelle.	Sool of Rodenberg.
Sulphate of Soda . .	5·22	4·91	1·11	10·81 grs.
Sulphate of Magnesia .	2·83	2·54	1·89	10·01 ,,
Sulphate of Lime . .	7·15	6·31	5·56	14·82 ,,
Sulphate of Potash . .	0	0	0	0·10 ,,
Chloride of Sodium .	0	0	0	49·84 ,,
Chloride of Magnesium	1·63	1·62	0·42	10·01 ,,
Chloride of Calcium .	4·30	4·51	3·18	4·61 ,,
Silica	0·05	0·06	0	0·20 ,,
	21·4	20·7	12·19	90·0 grs.
Gases.				
Carbonic Acid . . .	5·2	4·32	2·75	0·14 c. in.
Sulphuretted Hydrogen	1·21	1·20	0·61	0 ,,

NEUENAHR (Rhenish Prussia). Altitude 225′. Scenery picturesque and romantic. Climate mild.

Good for gout and rheumatism, scrofula, emphysema of the lungs, bronchial catarrh, uric acid diathesis, and all diseases of the mucous membrane.

Contents in 16 oz. Troy = 7680 grains:—

	Augustenquelle.	Mohr-Marien-sprudel.	Bisch. Apollinaris-brunnen.	Victoriaquelle.
Temperature, Fahr.	90°	102°	70°	
Carbonate of Soda . .	5·99	5·62	9·65	10·80 grs.
Carbonate of Magnesia	1·77	2·68	3·39	3·74 ,,
Carbonate of Lime . .	1·68	1·61	·45	3·30 ,,
Chloride of Sodium .	·71	·69	3·57	0·91 ,,
Sulphate of Soda . .	·58	·76	2·30	0·73 ,,
Oxide of Iron . . .	·04	0·06	0·15	0·10 ,,
Alumina	·13			
Silica	·17	0·19	0·06	0·25 ,,
	11·11	11·66	19·59	19·83 grs.
Carbonic Acid . . .	24·73	22·52	47·04	12·86 c. in.

Apollinaris is imported for drinking as a table water.

OREZZA (Corsica). Air warm. Temperature, 59° F.

Is a kind of ferruginous Seltzer Water, very agreeable to drink. It is drunk with pleasure and with benefit for indigestion, want of appetite, and general debility.

Analysis of 1000 grammes:—

Carbonate of Lime	·602 grammes.
Carbonate of Magnesia	·074 ,,
Carbonate of Protoxide of Iron	·128 ,,
Sulphate of Lime	·021 ,,
Chloride of Potash	·014 ,,
Chloride of Soda	
Aluminium	·006 ,,
Silicic Acid	·004 ,,
	·849 grammes.
Free Carbonic Acid	1·248 litres.

Imported.

OTTILIENQUELLE (Paderborn, Westphalia).

For incipient tuberculosis, great emaciation, etc.; in short, they are both tonic and restorative.

Analysis of 16 oz. Troy = 7680 grains:—

Carbonate of Lime	2·5	grains.
Carbonate of Iron	·05	,,
Chloride of Sodium	6·75	,,
Sulphate of Lime	·5	,,
Chloride of Calcium	·5	,,
Chloride of Magnesium	·25	,,
Iodine and Bromine	traces.	
	10·55	grains.
Gases.		
Carbonic Acid	2·34	c. in.
Nitrogen	8·98	,,
Oxygen	1·17	,,

MARIENQUELLE (in the neighbourhood), a chalybeate, contains 4¾ grains of solids. Amongst them—

Carbonate of Lime	1·75	grains.
Bicarbonate of Iron	·45	,,

PFAFFERS (Switzerland), altitude 2108′, and RAGATZ, altitude 1604′, which has the same water conveyed to it.

Pfaffers is situated in a ravine, and is the most valued; Ragatz is in an open country, with purer air. They are chiefly valued for the warmth of their springs. Season, June to September.

Capeller's Analysis of 16 oz. Troy = 7680 grains:—

Temperature, 100° F.

Carbonate of Magnesia	·87	grains.
Carbonate of Lime	·32	,,
Sulphate of Soda	·62	,,
Sulphate of Lime	·37	,,
Chloride of Sodium	·21	,,
Chloride of Magnesium	·16	,,
	2·55	grains.
Gases.		
Oxygen	1·3	c. in.
Nitrogen	3·7	,,
Carbonic Acid	4·15	,,

PLOMBIÈRES (Vosges, France). Altitude 1310′. Air bracing and pure, subject to change of temperature.

Chiefly used as baths, and Dr. Hebra's beds are used to keep patients immersed for days together; most suitable for gout, rheumatism, spinal, and female complaints. There are, also, cool chalybeate springs for drinking. Often visited by the late Emperor Napoleon III.

Analysis of 16 oz. Troy = 7680 grs.:—

Temperature, from 80° to 159° F.	Bain des Dames.	Bain Romain.	
Silicate of Soda	·6257	·5278	grain.
Silicate of Potash	·0080	0	,,
Silicate of Lime and Magnesia	·1530	·052	,,
Chloride of Sodium Chloride of Potassium Chloride of Calcium	·2754	·2290	,,
Sulphate of Soda	·6273	·3901	,,
Arseniate of Soda	·0053	0	,,
Silica	·0887	·3213.	,,
Alumina	·0760	·1980	,,
Nitrogenous organic matter	·1530	0	,,
	2·0024	1·6759	grains.

Imported.

POUGUES (Loire, France). Altitude 780′.

Analysis of "St. Leger" Spring, in 1 Litre:—

Bicarbonate of Lime	1·3269	grammes.
Bicarbonate of Magnesia	·9762	,,
Bicarbonate of Soda with traces of Potash	·6362	,,
Bicarbonate of Iron	·0206	,,
Sulphate of Soda	·2700	,,
Sulphate of Lime	·1900	,,
Chloride of Magnesium	·3500	,,
Silicic Acid and Alumina	·0350	,,
Glairine	·0300	,,
	3·8349	grammes.

PULLNA (Bohemia).

A bitter saline purgative, twice the strength of Seidlitz, useful in obstinate constipation.

Struve's Analysis of 16 oz. Troy = 7680 grs.:—

Sulphate of Soda	123·800	grains.
Sulphate of Potash	4·800	,,
Sulphate of Lime	2·600	,,
Carbonate of Lime	·770	,,
Sulphate of Magnesia	93·086	,,
Chloride of Magnesium	16·666	,,
Carbonate of Magnesia	6·406	,,
Phosphate of Lime	·003	,,
Silica	·176	,,
	248·307	grains.

Carbonic Acid Gas.

Imported.

PYRMONT (Waldeck). Altitude 404′. In a valley; the environs picturesque. Mean annual temperature, 48·5° F.

Chalybeate drinking springs, taste fresh and slightly ferruginous. The saline somewhat bitter; they are highly restorative. There is also a Grotto del Cane here.

Wigger's Analysis of 16 oz. Troy = 7680 grs. :—

Temperature, 51°—54½° F.	Trink-quelle.	Brodel-brunnen.	Augen-quelle.	Neu-brunnen.	Sool-quelle.	Myr. Sal. quelle.	Säur-ling.	
Sulphate of Lime . .	7·22	6·07	4·10	0	14·58	5·51	·31	grs.
Sulphate of Magnesia	2·69	5·53	4·56	3·47	2·33	0	·60	,,
Sulphate of Soda . .	2·14	0	1·71	7·34	5·29	12·24	·37	,,
Carbonate of Lime .	5·98	4·52	3·81	7·86	2·71	6·92	1·81	,,
Carbonate of Magnesia	·32	·24	·25	·96	·46	0	·16	,,
Carbonate of Soda .	0	4·78	·84	2·62	1·49	6·23	·30	,,
Carbonate of Iron . .	·49	·58	·13	·75	·08	·06	0	,,
Chloride of Sodium .	0	0	·44	4·38	61·68	65·49	·01	,,
Chloride of Magnesium	1·12	1·48	·45	·97	6·92	12·07	·12	,,
Silica	·49	·25	·10	·20	0	0	0	,,
	20·02	23·62	16·46	28·98	95·32	108·7	3·72	grs.
Carbonic Acid . .	44·52	38·51	36·28	39·28	17·46	26·19	21·84	c.in.
Sulphuretted Hydrogen	0	0	·39	0	0	0	0	

Imported.

RAKOCZI (*See* KISSINGEN), Bavaria.

RECOARO (Venetia). Altitude 1465′. Climate mild and bracing.

Situate at the foot of the Alps. Chiefly resorted to for the mild air and chalybeate springs. Season, May to October.

Cenedella's Analysis of 16 oz. Troy = 7680 grs. :—

Carbonate of Iron	·23	grains.
Carbonate of Lime	5·15	,,
Carbonate of Magnesia	·47	,,
Carbonate of Soda	0	,,
Sulphate of Magnesia	5·00	,,
Sulphate of Soda	·23	,,
Sulphate of Lime	9·5	,,
Chloride of Magnesium	·023	,,
Silica	·319	,,
	20·78	grains.
Gas.		
Carbonic Acid	17·99	c. in.

REICHENHALL (Upper Bavaria). Altitude 1407′. Mean temperature of spring, 56° F.; of summer, 64° F.: of autumn, 54° F. Climate mild and bracing.

Used only for baths, for scrofula and incipient tuberculosis, and for inhalation. Season, July and August.

Of the nineteen saline springs, the most abundant is

The "EDELQUELLE," which contains in 16 oz. Troy = 7680 grs. :—

Chloride of Sodium	1723·10	grains.
Chloride of Ammonium	·19	,,
Chloride of Magnesium	13·84	,,
Bromide of Magnesium	·23	,,
Sulphate of Soda	15·36	,,
Sulphate of Potash	4·70	,,
Sulphate of Lime	31·98	,,
Carbonate of Lime	·07	,,
Carbonate of Magnesia	traces.	
Oxide of Iron and Alumina	·06	,,
Silica	·08	,,
	1789·61	grains.
Free Carbonic Acid	traces.	

RIPPOLDSAU (Baden). Altitude 1886′. Air pure, fresh, and bracing.

Tonic resolvent for chlorotic and anæmic patients; also useful in pulmonary catarrh. Season, middle of May to middle of September.

Bunsen's Analysis of 16 oz. Troy = 7680 grs. :—

Temperature, Fahr.	Josephquelle. 46°	Leopoldsquelle. 49°	
Bicarbonate of Iron	·395	·455	grains.
Bicarbonate of Manganese	·033	·078	,,
Bicarbonate of Lime	12·939	14·598	,,
Bicarbonate of Magnesia	·543	2·888	,,
Sulphate of Soda	9·316	6·769	,,
Sulphate of Potash	·465	·271	,,
Sulphate of Lime	·428	·134	,,
Sulphate of Magnesia	1·866	·150	,,
Phosphate of Lime	0	·136	,,
Chloride of Magnesium	·650	·336	,,
Alumina	·034	·120	,,
Silica	·439	·663	,,
Phosphoric Acid Arsenic and organic matter	traces.	traces.	
	26·908	26·853	grains.

Gases.	Joseph-quelle.	Leopolds-quelle.
Temperature, Fahr.	46°	49°
Free Carbonic Acid	14·936	15·985 c. in.
Nitrogen	·003	·003 ,,
Oxygen	0	·003 ,,

ROISDORF (Rhenish Prussia). Altitude 1000′.

Table water.

Analysis of 16 oz. Troy = 7680 grs. :—

	Trink-quelle.	Stahl-quelle.
Carbonate of Soda	6·04	1·38 grains.
Carbonate of Lime	2·16	2·18 ,,
Chloride of Sodium	14·60	3·86 ,,
Carbonate of Magnesia	3·06	1·03 ,,
Carbonate of Protoxide of Iron	·05	·20 ,,
Silica	·12	·70 ,,
	29·70	10·53 grains.
Carbonic Acid	19 c. in	

Imported.

ROSBACH (Germany).

Analysis of 1 gallon = 70,000 grains :—

Chloride of Sodium	83·0 grains.
Carbonate of Lime	25·7 ,,
Carbonate of Magnesia	12·6 ,,
Imported and drunk as a table water.	121·3 grains.

ROYAT (Puy-de-Dôme, France). Altitude 1380′.

These are alkaline springs, and are useful in cases of gastro-intestinal dyspepsia, rheumatism, and catarrhal affections of the genito-urinary passages.

Analysis :—

	Eugénie.	Cæsar.	St. Mark.	St. Victor.
Bicarbonate of Soda	1·349	·392	·8003	·8886 grains.
Bicarbonate of Potash	·435	·286	·1701	·8886 ,,
Bicarbonate of Lime	1·000	·686	·9696	1·0121 ,,
Bicarbonate of Magnesia	·677	·397	·6568	·6464 ,,
Bicarbonate of Iron	·040	·025	·0230	·0560 ,,
Sulphate of Soda	·185	·115	·1463	·1656 ,,
Phosphate of Soda	·018	·014	traces.	traces.
Chloride of Sodium	1·728	·766	1·5655	1·6497 ,,
Chloride of Lithium			·0350	·0350 ,,
Silicic Acid	·156	·167		
Silica			·0945	·0950 ,,
	5·588	2·848	4·4551	5·4370 grains.
Carbonic Acid	·377	1·229	1·709	1·492 grains.

Imported.

SAINT-GALMIER (Loire, France). Altitude 1350′.

Useful in dyspepsia.

Analysis in 1000 parts of " Badoit " spring :—

Bicarbonate of Soda	·560 grains.
Bicarbonate of Potash	·020 ,,
Bicarbonate of Lime Bicarbonate of Magnesia	1·440 ,,
Sulphate of Soda Sulphate of Lime	·200 ,,
Silicate of Alumina	·134 ,,
Chloride of Magnesium	·480 ,,
	2·834 grains.
Free Carbonic Acid	1·25 volume.

Imported.

SANKT-MORITZ or SAINT-MAURICE (Upper Engadine, Switzerland). Altitude 5464′. Climate rough; environs romantic. Mean temperature of summer months, 51° F.

Tonic and stimulating, in debility, anæmia, neuralgia, scrofula, and in some conditions of lung disease. Used for drinking and for baths. Season, July and August.

The old spring contains in 16 oz. Troy = 7680 grs. :—

Temperature, Fahr. 42°.

Carbonate of Lime	5·5 grains.
Carbonate of Magnesia	1·0 ,,
Carbonate of Iron	·18 ,,
Carbonate of Manganese	·03 ,,
Carbonate of Soda	1·46 ,,
Sulphate of Soda	2·0 ,,
Chloride of Sodium	·29 ,,
Sulphate of Potash	·12 ,,
Silica	·29 ,,
Phosphoric Acid	·03 ,,
Bromine, Iodine, and Fluorine	traces.
	10·90 grains.
Carbonic Acid	39·5 c. in.

Imported.

The new spring contains 13½ grains of solids in 16 oz., viz. :—

More Lime and Magnesia than the old spring, 0·25 grain of Iron, and 40½ cubic inches of Carbonic Acid.

SCHINZNACH (Switzerland). Altitude 1060′. Mountainous and picturesque. Climate mild and salubrious.

There is only one spring; it is the most sulphureous of all the Continental waters, and the most frequented. The visitors are chiefly French. The baths are cooled to 90° F.; they are used for skin diseases, diseases of the bones, and local rheumatism.

Analysis of 16 oz. Troy = 7680 grs. :—

Temperature, 96° F.

Sulphate of Soda	9·87 grains.
Sulphate of Potash	·68 ,,
Sulphate of Lime	1·20 ,,
Chloride of Potassium	5·48 ,,
Chloride of Magnesium	1·14 ,,
Magnesia	·64 ,,
Carbonate of Magnesia	·03 ,,
Carbonate of Lime	1·09 ,,
Oxide of Iron	·008 ,,
Alumina	·07 ,,
Silica	·09 ,,
Gases.	
Carbonic Acid	2·38 c. in.
Sulphuretted Hydrogen	1·72 ,,
Nitrogen	a trace.

SCHLANGENBAD (Nassau). Altitude 933′. Mean annual temperature, 50° F. Locality romantic. Air mild and bracing. Season, June, July, and August.

The baths have a sedative and a beautifying influence on the skin, rendering it soft and juvenile; highly useful in nervous irritability arising from debility.

Fresenius's Analysis of 16 oz. Troy = 7680 grs. :—

Sulphate of Potash	0·091	grains.
Chloride of Potassium	0·004	,,
Chloride of Sodium	1·325	,,
Phosphate of Soda	0·004	,,
Carbonate of Potash	0·079	,,
Carbonate of Lime	0·250	,,
Carbonate of Magnesia	0·047	,,
Silica	0·258	,,
	2·558	grains.
Carbonic Acid	0·668	grain.

SCHWALBACH (Nassau). Altitude 909′. Climate bracing. Mean season temperature, 64° F.

Resorted to for quiet, and recruiting dilapidated health. Season, June, July, and August.

Fresenius's Analysis of 16 oz. Troy = 7680 grs. :—

Temperature, Fahr.	Stahl-brunnen. 46°—51°	Wein-brunnen. 49°—50°	Paulinen brunnen 48°—50°	Rosen-brunnen.	
Bicarbonate Protoxide of Iron	·643	·443	·65	·91	grain.
Bicarbonate Protoxide of Manganese	·141	·070	0	0	,,
Bicarbonate of Soda	·158	1·884	45	·35	,,
Chloride of Sodium	·052	·066	·03	·32	,,
Sulphate of Soda	·061	·048	·02	·8	,,
Sulphate of Potash	·029	·057	0	0	,,
Bicarbonate of Lime	1·700	4·394	2·95	2·95	,,
Bicarbonate of Magnesia	1·630	4·467	2·75	·98	,,
Silica	·246	·357	0	0	,,
	3·660	11·786	6·86	5·57	grains.
Gases.					
Carbonic Acid	50·27	45·6	39·5	·26	c. in.
Sulphuretted Hydrogen	·003	·003	0	0	,,

The first two are for drinking, the last two for bathing. The Stahlbrunnen is employed for general torpidity.

Imported.

SEIDLITZ (Bohemia).

Steinmann's Analysis of 16 oz. Troy = 7680 grs. :—

Sulphate of Magnesia	79·55	grains.
Sulphate of Soda	17·44	,,
Carbonate of Lime	5·29	,,
Carbonate of Magnesia	·20	,,
Carbonate of Strontia	·009	,,
Sulphate of Lime	4·14	,,
Sulphate of Potash	4·41	,,
Chloride of Magnesium	1·06	,,
Carbonate of Protoxide of Iron and Manganese	·05	,,
Silica	·05	,,
Fluoride and Bromide of Magnesium	a trace.	
	112·199	grains.

SELTERS (Nassau). Altitude 800′. Furnishes the well-known *Seltzer-water*.

Kastner's Analysis of 16 oz. Troy = 7680 grs. :—

	Temperature 62° F.	
Bicarbonate of Soda	9·7741	grains.
Chloride of Sodium	17·2285	,,
Chloride of Potassium	·2890	,,
Sulphate of Soda	·2615	,,
Phosphate of Lime	·0004	,,
Phosphate of Alumina	·0002	,,
Phosphate of Soda	·2615	,,
Fluoride of Calcium	·0016	,,
Bicarbonate of Lime	2·6678	,,
Bicarbonate of Magnesia	2·5586	,,
Bicarbonate of Iron	·1088	,,
Bicarbonate of Manganese	·0032	,,
Bromide of Sodium	·0002	,,
Silica	·2500	,,
	33·4054	grains.
Gases.		
Carbonic Acid	30·0100	c. in.
Nitrogen	·0285	,,
Oxygen	·0046	,,
	30·0431	c. in.

Imported.

SODEN (Nassau). Altitude 437′. Locality charming; air mild; temperature steady.

There are nineteen other springs not in use. In Germany these springs have a great reputation for chest diseases, are employed in atonic gout, scrofula, and diseases peculiar to females.

Analysis of 16 oz. Troy = 7680 grs.:—

Temperature, Fahr.	Milchbrunnen. 74°	Warmbrunnen. 70°	Wilhelmsbrunnen. 57°	Soolbrunnen. 68°	
Chloride of Sodium	17·68	26·13	104·10	114·40	grains.
Chloride of Potassium	·16	1·29	2·53	3·52	,,
Sulphate of Lime	·19	·25	·98	·76	,,
Carbonate of Lime	2·73	4·47	8·38	8·63	,,
Carbonate of Magnesia	1·37	2·63	1·28	·29	,,
Carbonate of Iron	·16	·30	·30	·60	,,
Alumina	·01	0	·05	·88	,,
Silica	·16	·23	·30	·50	,,
	23·46	35·30	117·92	129·58	grains.
Carbonic Acid	17·0	35·9	48·9	14·0	c. in.

SPA (Belgium). Altitude 1030′. Sheltered. Air salubrious and bracing, but subject to sudden changes of temperature.

There are seven springs in all.

These chalybeates are highly beneficial in anæmia, debility, and depression of system. Season, August and September.

Struve's Analysis of 16 oz. Troy = 7680 grs. of Pouhon :—

Temperature, 52° Fahr.		
Carbonate of Protoxide of Iron	·375	grains.
Carbonate of Protoxide of Manganese	·052	,,
Carbonate of Soda	·738	,,
Carbonate of Lime	·986	,,
Carbonate of Magnesia	1·123	,,
Sulphate of Potash	·079	,,

Sulphate of Soda	·038 grains.
Chloride of Sodium	·050 ,,
Phosphate of Lime	·013 ,,
Phosphate of Alumina	·009 ,,
Silica	·499 ,,
	3·962 grains.
Carbonic Acid Gas	21·6 c. in.

Imported.

TARASP (Switzerland). Lower Engadine. Altitude 4265′. Scenery mountainous and cultivated.

Useful in abnormal obesity, oppressed functions of the glandular and vascular system, gout, rheumatism, and skin diseases, the mountain air contributing largely to invigorate the system. Season, June to September, when the weather is genial and constant. Mean temperature of July, 51° F.

Dr. Planta's Analysis of 16 oz. Troy = 7680 grs.:—

	Grosse-quelle. Temperature 37° F.	Kleine-quelle.
Sulphate of Soda	16·547 grains.	16·417 grains.
Carbonate of Soda	27·229 ,,	28·535 ,,
Chloride of Sodium	29·401 ,,	29·381 ,,
Carbonate of Magnesia	5·076 ,,	4·977 ,,
Carbonate of Protoxide of Iron	·152 ,,	·140 ,,
Carbonate of Lime	12·432 ,,	12·402 ,,
*Iodide of Sodium	1·536 ,,	
Sulphate of Potash	2·998 ,,	3·337 ,,
Silica	·247 ,,	·092 ,,
Alumina	·002 ,,	
Phosphoric Acid	·002 ,,	
Carbonic Acid	34·887 ,,	33·271 ,,

Imported.

TAUNUS (Frankfort). Altitude 390′.

Analysis of 10,000 parts:—

Chloride of Sodium	25·72
,, Potassium	2·70
Carbonate of Lime	13·70
,, Magnesia	1·76
,, Soda	·20
Sulphate of Lime	·58
Silica	traces.
Alumina	traces.
Phosphate of Lime	traces.
	54·66
Carbonic Acid compressed	28·94
Carbonic Acid by estimate in solution	17·35
	46·29

Imported and drunk as a table water.

TCHITLI (Turkey). Bicarbonate of Soda Spring.

Rises at 55° F., sp. g. 1005.

Contents of a litre = 35 fluid oz.

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* Dr. Killias has corrected Planta. He says the quantity of Iodide of Sodium is only 0·0015 grain.

Bicarbonate of Soda	4·554 grammes.
,, ,, Potash	·148 ,,
,, ,, Magnosia	·365 ,,
,, ,, Lime	·367 ,,
Sulphate of Soda	·132 ,,
Phosphate of Soda	·061 ,,
Chloride of Sodium	·066 ,,
Protoxide of Iron	·005 ,,
Iodide of Sodium	a trace.
Silex	·057 ,,
Free Carbonic Acid	·475 ,,
	6·230 grammes.

Imported.

TOEPLITZ or TEPLITZ (Bohemia). Altitude 648′. Sheltered. Climate mild and salubrious. Mean annual temperature, 50° F.

There are several springs, ranging from 78° to 120° F., nine bathing establishments, and mud-baths also. The baths are best suited to nervous patients, very efficacious in chronic rheumatism, gout, paralysis, and neuralgia.

Wolf's Analysis of 16 oz. Troy = 7680 grs. :—

	Haupt-quelle. Temperature, 120° F.
Sulphate of Potash	0·098 grains.
Sulphate of Soda	·290 ,,
Carbonate of Soda	2·635 ,,
Phosphate of Soda	·014 ,,
Fluoride of Silicium	·351 ,,
Chloride of Sodium	·433 ,,
Carbonate of Lime	·330 ,,
Carbonate of Strontia	·027 ,,
Carbonate of Magnesia	·088 ,,
Carbonate of Protoxide of Iron	·019 ,,
Carbonate of Protoxide of Manganese	·021 ,,
Phosphate of Alumina	·020 ,,
Silica	·443 ,,
Crenic Acid	·034 ,,
	4·854 grains.

VALS (France). Altitude 2475′.

Beneficial in lithiasis, indigestion, syphilitic and skin diseases, and scrofula.

M. Henri's Analysis of 1 litre (35 fluid oz.) :—

	Saint-Jean.	Pré-cieuse.	Dé-sirée.	Rigo-lette.	Made-leine.
Temperature	66° F.	66° F.	68° F.	68° F.	66° F.
Bicarbonate of Calcium	0·3100	0·630	0·571	0·259	0·520
Bicarbonate of Magnesia	0·1200	0·750	0·900		0·672
Bicarbonate of Soda	1·4800	5·940	6·040	5·800	7·280
Bicarbonate of Potash	0·0400	0·230	0·263	0·265	0·255
Bicarbonate of Protoxide of Iron with trace of Manganese	0·0060	0·010	0·010	0·024	0·029
Chloride of Sodium and Potassium	0·0600	1·080	1·100	1·200	1·016
Sulphate of Soda	0·0540	0·185	0·200	0·220	0·235
Sulphate of Calcium	0·0700				
Alumina	0·0110	0·060	0·058	0·060	0·097
Bicarbonate of Lithia	traces.	traces.	traces.	traces.	traces.
Arseniate of Soda					
Alkaline Ioduret					
Organic Matter					
Grammes	2·1510	8·885	9·142	7·828	9·104
= Grains	33	136	141	120	140
Carbonic Acid Gas	0·4250	2·218	2·145	·095	2·050

Imported.

Saint-Jean, sedative; Désirée, Précieuse, laxative; Rigolette, Madeleine, renovating; also Dominique, tonic.

Imported.

VERNET (Eastern Pyrenees). The principal sources of the ancient Thermæ used by the Romans.

There are three springs, temperature 48° F., 91° F., and 137° F. Here Ibrahim Pasha resided. By means of pipes fed by the thermal water the apartments are kept at a comfortable warmth (54° to 59° F.) the whole of the winter (most desirable for phthisical patients), so that the waters can be taken at all seasons. Mean temperature of the atmosphere in October, 61° F.; in November, 51° F.; showing a mild and equable climate.

VICHY (Central France). Altitude 787′. Locality charming; climate very mild, hot in summer.

Useful in kidney diseases and diabetes, also in gout and hepatic derangement.

Both for drinking and bathing. Season, May to October.

Bouquet's Analysis of a litre (35 fluid oz.):—

	Grande Grille.	Hôpital.	Célestins.	Hauterive.
Temperature	106° F.	86° F.	57·6° F.	59° F.
Carbonic Acid	0·908	1·067	1·299	2·183
Bicarbonate of Soda	4·883	5·029	4·101	4·687
Bicarbonate of Potash	0·352	0·440	0·231	0·189
Bicarbonate of Magnesia	0·303	0·200	0·554	0·501
Bicarbonate of Strontia	0·003	0·005	0·005	0·003
Bicarbonate of Lime	0·434	0·570	0·669	0·432
Bicarbonate of Protoxide of Iron	0·004	0·004	0·004	0·017
Bicarbonate of Protoxide of Manganese	A trace.	A trace.	A trace.	A trace.
Sulphate of Soda	0·291	0·921	0·314	0·291
Phosphate of Soda	0·130	0·046	A trace.	0·046
Arseniate of Soda	0·002	0·002	0·003	0·002
Borate of Soda	A trace.	A trace.	A trace.	A trace.
Chloride of Sodium	0·534	0·518	0·550	0·534
Silica	0·070	0·050	0·065	0·071
Organic Matter, Bituminous	A trace.	A trace.	A trace.	A trace.
Grammes	7·914	8·222	7·865	8·946
Grains =	122	126	121	138

Imported.

WEILBACH (Nassau). Altitude 420′. Situated on a fertile declivity. Climate mild.

The water is generally warmed before being drunk.

Good in chest diseases, in gout, rheumatism, and herpetic affections, and in lead and mercury poisoning.

Fresenius's Analysis of 16 oz. Troy = 7680 grs.:—

Sulphur Spring, Temperature 57° F.		New Soda-Lithia, Temperature 54·5° F.		
Bicarbonate of Soda	3·123		7·3748	grains.
Bicarbonate of Lithia	·006		·0452	,,
Bicarbonate of Baryta	·009	Carbonate of Iron	·0193	,,
Bicarbonate of Strontia	·001	Carbonate of Manganese	·0039	,,
Chloride of Sodium	2·083		9·6677	,,
Chloride of Potassium	·214	Sulphate of Soda	1·7073	,,
Sulphate of Potash	·298		·4233	,,
Phosphate of Alumina	·001	Bromide of Sodium	·0056	,,
Phosphate of Lime	·002	Iodide of Sodium	·0010	,,
Carbonate of Lime	2·909		·7504	,,
Carbonate of Magnesia	2·758		·5563	,,
Silica	·111		·0943	,,
Organic Matter	·037	Carbonate of Ammonia	·0871	,,
	11·566		20·6581	,,
Gases.				
Carbonic Acid	3·126 c. in.	Carbonic Acid	5·9553	c. in.
Sulphuretted Hydrogen	·169 ,,	Sulph. Hydrogen	·0026	,,

Imported.

WIESBADEN (Nassau). Altitude 346′. Open to the south, with charming environs. Mean annual temperature 51° F. Season, May to September.

There are twenty-three springs; the Kochbrunnen is the principal.

Useful in chronic rheumatism and gout. The baths are allowed to cool before using them.

Fresenius's Analysis of 16 oz. Troy = 7680 grs.:—

Temperature, 160° F.

Chloride of Sodium	52·50	grains.
Chloride of Potassium	1·12	,,
Chloride of Lithium	·001	,,
Chloride of Ammonium	·130	
Chloride of Calcium	3·620	,,
Chloride of Magnesium	1·570	,,
Bromide of Magnesium	·030	,,
Sulphate of Lime	·690	,,
Silica	·460	,,
Carbonate of Lime	3·210	,,
Carbonate of Magnesia	·080	,,
Carbonate of Protoxide of Iron	·040	,,
Carbonate of Protoxide of Manganese	·004	,,
Phosphate of Lime	·003	,,
Arseniate of Lime	·001	,,
Silicate of Alumina	·004	,,
	63·463	
Gases.		
Carbonic Acid	16·72	c. in.
Nitrogen	·10	,,

WILDBAD (Würtemberg). Altitude 1300′. Scenery wild and romantic. Season, June to September, when the weather is hot; the other months very cold.

There are about fifty warm springs.

These baths are used in chronic rheumatism and gout, and in paraplegic paralysis of the lower extremities. Plethoric habits require care in using the baths.

Analysis of 16 oz. Troy = 7680 grs.:—

Temperature, 96° F.

Chloride of Sodium	1·82	grains.
Carbonate of Soda	·53	,,
Sulphate of Soda	·40	,,
Sulphate of Potash	·20	,,
Carbonate of Lime	·34	,,
Carbonate of Magnesia	·70	,,
Carbonate of Protoxide of Iron and Manganese	·29	,,
Silica	·39	,,
	3·58	grains.
Gases.		
Carbonic Acid		
Nitrogen		
Oxygen		

[The above have been condensed from the works of Dr. Sutro, Dr. Althaus, Dr. Glover, and the various pamphlets issued at the sources of the several Spas.]

The following are sold in bottles:—

ADELHEIDSQUELLE (Heilbrunn, Germany). Contains a large proportion of Salts of Bromine and Iodine; acts powerfully on the glandular, lymphatic, and cutaneous systems. *Vide* analysis.

ÆSCULAP (Hungary). A recently imported water, which Professor Tichborne has compared with Hunyadi Janos, as being equally purgative, and more antacid, its action is gentle, and at the same time prompt and efficacious.

AIX-LA-CHAPELLE (Rhenish Prussia). For cutaneous diseases, &c.

* ALET (France). Chalybeate. Useful in cases of debility.

APOLLINARIS (Neuenahr). Acidulous, gaseous, and combines the properties of Seltzer and Ems (Krähnchen). Good for sickness, dyspepsia, and bad appetite. When impregnated with Carbonic Acid is drunk at meals.

* BARÉGES (France, *Hautes-Pyrénées*). Sulphureous; effective in skin diseases, scrofula, diseased bone, and ulcers. *Vide* analysis.

* BIRMENSDORFF (Switzerland). Alterative bitter saline, consisting chiefly of Sulphates of Lime, Magnesia, and Soda.

BONNES (France, *Basses-Pyrénées*). Sulphureous; is highly extolled for incipient consumption, scrofula, rheumatism, and as a purifier of the blood. *Vide* analysis.

BOURBOULE, LA (France, *Puy-de-Dôme*). Contains arsenic and iron. For impoverished blood, gout, &c.

BUSSANG (France, *Vosges*). Saline chalybeate; strengthens the digestive organs, acting mildly on the bowels and kidneys.

CARLSBAD (Sprudel, 165° F. Mühlbrunnen, 127° F., and Schlossbrunnen), Alkaline and gaseous; Sprudel is the favourite; drunk for bilious affections, gall stones, jaundice, gout, and gravel; are powerfully purgative. *Vide* analysis.

CARLSBAD-SALT. In bottles.

* CAUTERETS (France, *Hautes-Pyrénées*). Sulphureous; more exciting than Baréges and Bonnes; useful in skin diseases, rheumatism, and scrofula.

* CHALLES (Savoy). Sulphureous; milder in action than Baréges.

CONTREXVILLE (France, *Vosges*). Alkaline, chalybeate; promotes circulation of the blood, good in chlorosis, gastralgia, etc.

EMS (Kessel and Krähnchen, Nassau). Saline, gaseous, preferred to Carlsbad in nervous irritability, good in pulmonary as well as scrofulous complaints, gout, etc. *Vide* analysis. EMS-SALT in bottles.

ENGHIEN (Paris, Montmorency). A valuable sulphureous water, useful in glandular affections, and as a general tonic.

FACHINGEN (Nassau). Acidulous, gaseous; a favourite beverage, acting on the kidneys and bladder, and counteracting the tendency to lithic acid. *Vide* analysis.

FRIEDRICHSHALL, Bitter Water (Saxe-Meiningen). Alterative, aperient; acting on the liver and pancreas; similar to Pullna. *Vide* analysis. It is very largely consumed in England, being a most valuable alterative and aperient; it is made warm and drunk in doses of half a tumblerful in the morning twice a week. The importations are frequent, as it is bottled at the Spring throughout the year except in frosty weather.

HOMBURG (Central Germany). More active than Kissingen Rakoczi, and better suited to a torpid state of bowels. *Vide* analysis. Also Homburg Salt.

HUNGARIAN BITTER WATER (Royal), like Hunyadi Janos.

HUNYADI JANOS. See BUDA-PESTH. Bitter aperient.

KISSINGEN (Maxbrunnen, Bavaria). Saline, gaseous; less exciting and more aperient than Carlsbad. (Rakoczi, Pandur.) Saline, gaseous; aperient, alterative, deobstruent, with a specific action on the uterine system of females. *Vide* analysis.

KISSINGEN, Bitter Water, is similar to that of Friedrichshall.

KREUZNACH (Elizabeth, Prussia). Saline; contains Iodine; alterative, tonic, and renovating, useful in lymphatic and torpid habits. *Vide* analysis.
Kreuznach-Salt in bottles.

LEVICO (Austrian Tyrol). Contains Arsenic and Iron.
For anæmia, chlorosis, &c.

LUHATSCHOWITZ (Moravia, Austria). Contains Bromide, Iodide, Chloride, and Carbonate of Sodium.

MARIENBAD (Kreuzbrunnen, Bohemia). A gaseous bitter saline, similar in properties to Carlsbad, but milder. *Vide* analysis.

NEUENAHR (on the Rhine, Apollinaris). Gaseous saline; exhilarating, diuretic, slightly acting on the liver and stomach. *Vide* analysis.

OFEN (Rakoczi), Kissingen.

OREZZA (Corsica). Chalybeate, with a trace of Manganese, and highly sparkling; useful in gastralgia, sluggish liver, and spleen, chlorosis, amenorrhœa, and leucorrhœa.

POUGUES (France). Saline, slightly chalybeate, contains 34 grs. in 20 oz., chiefly Bicarbonates of Lime and Magnesia, with Carbonic Acid; drunk for gravel and catarrh of the bladder.

PULLNA (Bohemia). A bitter saline; mild and effective purge, acting without griping. *Vide* analysis.

PYRMONT (Westphalia). A valuable chalybeate in dyspepsia, debility from exhausting diseases, and constitutional weakness. *Vide* analysis.

ROYAT (France, *Puy-de-Dôme*). Alkaline spring, good in cases of gastro-intestinal dyspepsia, rheumatism, &c.

SAINT-MORITZ (Switzerland). Tonic, and stimulating in debility.

SCHWALBACH (Weinbrunnen and Stahlbrunnen, Nassau). Chalybeate; pleasant to drink, tonic, alterative, and restorative; the Weinbrunnen preferred.

* SEIDLITZ, Bitter water (Bohemia). Purgative.

SOULTZMATT (France). Acidulated, gaseous; much used in France as a beverage.

SPA, Pouhon; Prince de Condé. Gaseous, chalybeate waters; restorative in cases of debility consequent upon disease, bodily or mental exertion, for both sexes; either of them may be used.

TARASP (Switzerland). Drunk for abnormal obesity, &c., &c.

VALS (France). Strongly resembling those of Vichy, but less lowering; the principal are, Madeleine, Précieuse, and Rigolette. *Vide* analysis.

VICHY, Source de l'Etat (France). Saint-Yorre, alkaline; Parc, 71° F., alkaline; Des Dames, 61° F., chalybeate, most gaseous; Célestins, 39° F., for gravel and gout; Hauterive, 59° F., Hôpital, 87° F., for indigestion; Grande Grille, 107° F., for liver, dyspepsia, and intermittent fever, loss of appetite, congestion of liver and spleen; Lardy, chalybeate, for anæmia. *Vide* analysis.
Vichy-Salt in bottles.

* WEILBACH (Nassau). A weak sulphureous water, and largely impregnated with Carbonic Acid Gas; used in chest diseases.

WILDUNGEN (Waldeck). Alkaline, diuretic, antilithic, tonic; restorative, useful in leucorrhœa, spermatorrhœa, and, mixed with milk, for chronic bronchial affections.

WOODHALL and PURTON British waters } are also sold in bottles.
BETHESDA and MISSISQUOI from the United States }

Those marked with an asterisk are not so frequently in demand, and should be ordered in advance.

The following waters are drunk at table:—

The Imperial pint of water (20 oz.) contains of Saline Matter as follows:—

Apollinaris	(Rhenish Prussia)	22	grains.	Chiefly Carbonate of Soda.
Bellthal	(Rhenish Prussia)	30	,,	Carbonates of Lime, Magnesia, & Soda.
Bilin	(Bohemia)	43	,,	Chiefly Carbonate of Soda.
Birresborn	(Rhenish Prussia)	42	,,	Carbonate of Soda and Chloride of Sodium.
Condillac	(France, Drôme)	11	,,	Chiefly Bicarbonate of Lime.
Evian	(Switzerland)	5	,,	,, Bicarbonate of Soda.
Gerolstein	(Rhenish Prussia)	16	,,	Carbonates of Lime, Magnesia, and Soda.
Gieshübler	(Bohemia)	12	,,	Chiefly Carbonate of Soda.
Harzer	(Germany)	11	,,	Carbonates of Lime and Soda, and Chloride of Sodium.
Roisdorf	(Rhenish Prussia)	34	,,	Chloride of Sodium, Carbonates of Soda, Lime and Magnesia.
Rosbach	(Homburg)	15	,,	do. do.
St. Galmier	(Badoit, France)	30	,,	do. do.
Seltzer (Selters)	(Nassau)	38	,,	Chloride of Sodium and Carbonate of Soda.
Sulis	(Bath, Somerset)	20	,,	Sulphates of Lime and Soda, Chloride of Magnesium and Sodium.
Taunus	(Frankfort)	30	,,	Carbonate of Lime and Chloride of Potassium and Sodium.
Wilhelmsquelle	(Franfort)	21	,,	Chlorido of Sodium, Carbonate of Lime.

Comparatively Pure.

Bristol.
Buxton.
Clifton.
Gastein, 118°.
Malvern.
Schlangenbad, 50°.
Wilbad, 96°.
Winfred.

Alkaline and Gaseous.

Chateldon.
Condillac.
Contrexville, 53°.
Ems, 85° to 117°.
Fachingen.
Gieshübler.
Neuenahr, 70° to 102°.
Vals.
Vichy.
Wildungen, 96°.

Saline.

Homburg, 50° to 52°.
Kissingen, 49° to 51°.

Bitter Saline.

Birmenstorf.
Cheltenham.
Epsom.
Friedrichshall.
Hunyadi Janos.
Hungarian (Royal).
Kingswood.
Leamington.
Marienbad.
Pullna.
Seidlitz.

Saline containing Bromine and Iodine.

Achselmannstein, 61°.
Adelheidsquelle, 50°.
Arnstadt.
Carlsbad, 119° (Markt-brunnen).
Durkheim.
Ischl.
Kœnigsdorff-Jastrzemb.
Kissingen, 49° to 51°.
Krankenheil.
Kreuznach, 54·5°.
Luhatschowitz, 48·6°.
Mergentheim.
Mondorf, 77°.
Reichenhall, 54° to 64°.
Tarasp, 37°.
Wiesbaden, 160°.
Woodhall.

Saline containing Lithia.

Baden-Baden.
Carlsbad, 119° (Markt-brunnen).
Franzensbad, 45°.
Kissingen, 49° to 51°.
Weilbach, 54°.

COOL, AND THERMAL, UNDER 98° F.

Sulphureous.

Baden, Austria, 92°.
Berka.
Bonnes, 91·5°.
Challes.
Eilsen, 59°.
Enghien.
Krankenheil.
Labassère, 54° to 57°.
Landeck, 81° to 83°.
Meinburg, 61°.
Nenndorf, 52°.
Schinznach, 96°.

Chalybeate and Gaseous.

Alet.
Alexandersbad.
Alexisbad.
Altwasser.
Auteuil.
Berka.
Bocklet, 50°.
Bussang.
Charlottenbrunn.
Driburg, 51°.
Kösen, 65°.
Kronthal, 61°.

Chalybeate,—*continued.*

Lippspringe, 70°.
Marienbad.
Meinburg.
Orezza.
Pougues.
Pyrmont.
Recoaro.
Rippoldsau.
Saint-Maurice, 42°.
Schwalbach, 46° to 51°.
Soden, 68° to 74°.
Spa, 52°.

HOT SPRINGS.

Wildbad, 96°.
Pfaffers, 100°.
Neuenahr, 102°.
Vichy, 106°.
Lippik, 111°.
Lucca, 116°.
Ems, 117°.
Gastein, 118°.
Bath, 118° to 120°.
Toeplitz, 120°.
Leuk, 124°.
Cauterets, 131°.
Aix-la-Chapelle, 131°.
Verney, 137°.
Ofen, 141°.
Baden-Baden, 155°.
Ischia, 158°.
Plombières, 159°.
Wiesbaden, 160°.
Carlsbad, 162°.
Borcette, 171°.

Sulphureous.

Baréges, 111°.
Aix-les-Bains, 116°.
Aix-la-Chapelle, 131°.
Cauterets, 131°.
Borcette, 140°.
Bagnères-de-Luchon, 154°.

WATERS FOR THE TABLE.

Apollinaris.
Bellthal.
Bilin.
Birresborn.
Condillac.
Evian.
Gerolstein.
Gieshübler.
Harzer.
Roisdorf.
Rosbach.
St. Galmier.
Seltzer.
Sulis.
Taunus.
Wilhelmsquelle.

SECTION A.

THERAPEUTICAL CLASSIFICATION OF REMEDIES.

AGENTS OF DEFINITE OPERATION.

Alteratives.—Medicines which gradually change and correct a morbid condition of the organs, without necessarily producing evacuations.

Those of *Antimony* are, Antimonii Oxidum, A. Sulphuratum, A. Tartaratum.
Arsenic—Acidum Arseniosum, Liquor Arsenicalis, Liquor Arsenici Hydrochloricus, Liquor Sodii Arseniatis.
Chlorine—Acidum Nitro-hydrochloricum Dil., Ammon. Chloridum, Calx Chlorinata, Chlori Liquor, Potassii Chloras, Liquor Sodæ Chlorinatæ, Sodii Chloridum.
Iodine and the Iodides.
Mercury—Hydrarg. c. Cretâ, Pilula Hydrarg., Hydrarg. Perchloridum and Subchloridum, Hydrarg. Iodidum.
Phosphorus and the Hypophosphites.
Potassium Salts.
Sulphur—Præcipitatum, Sublimatum, and Sulphides.
Vegetable—Dulcamara, Guaiacum, Hemidesmus (renal), Mezereum, Sarsaparilla, Taraxacum.
Eclectics—Corydalin, syphilitic; Iridin, renal; Leptandrin, hepatic; Phytolaccin, scorbutic; Podophyllin, Rumicin, Sanguinarin.
Mineral Waters—Adelheidsquelle, Carlsbad, Ems, Friedrichshall.

Anæsthetics.—Substances which suspend consciousness or cause insensibility to pain. They are divided into *General* (by inhalation) and *Local* (by spray or other application to the part). *General Anæsthetics:* Æther, Æther Methylatus (sp. g. ·717), Æthyl Bromidum, A.C.E. Mixture, Chloroform, Carbon Tetrachloride, Methylene, Nitrous Oxide Gas, Regnauld's Anæsthetic Mixture. *Local Anæsthetics:* Acid. Carbolic., Æther (spray), Æther Methylatus (sp. g. ·717), Æther Methylicus, Æthyl Bromidum, Antipyrin, Cocainæ Hydrochloras, Erythrophlæinæ Hydrochloras, Iodoformum, Menthol, Methyl Chloridum.

Anodynes.—Medicines which alleviate pain by lessening the excitability of nerves or nerve centres: Aconitum, Aconitina, Amyl Nitris, Antifebrin, Antipyrin, Atropina, Belladonna, Bromides, Brucine, Butyl-Chloral Hydras, Caffeina, Cajuputi Ol., Camphor, Cannabis Indica, Chloral Hydras, Chloroform, Cimicifuga, Codeina, Condurango, Conina, Conium, Exalgine, Gelsemium, Lupulus, Hyoscyamus, Morphina, Opium, Phenacetin, Piscidia, Scopola, Solanine, Spiritus Ætheris, Stramonium, Veratrina.

Antacids.—Agents which correct acidity of the secretions: Ammonia, Amm. Acet. Liquor, Ammon. Spirit. Aromatic., A. Carbonas, Bismuthi Trochisci, Calcis Liquor, C. Carbonas, C. Saccharatus Liquor, Creta Præparata, Decoct. Aloes Comp., Lithiæ Aq. Efferv., L. Carbonas, L. Citras, Magnesia, M. Carbonas, Potassæ Liquor, P. Bicarbonas, P. Carbonas, Sapo Durus, Sodii Bicarbonas, Sodæ Liquor, Sodæ Liquor Efferv., Sodii Carb.

Mineral Waters—Contrexeville, Ems, Fachingen, Tarasp, Vichy.

Antalkalines.—Medicines which neutralize excess of alkaline matter in the alimentary canal and urinary organs: Acid. Benzoic., A. Hydrochlor. Dil., A. Nit. Dil., A. Phosphoric. Dilut., A. Sulphuric. Dilut., Ammon. Benz., Potass. Benz., Sodii Benz.

Anti-Anæmics.—*See* Tonics, Blood.

Antemetics.—*See* Sedatives, Stomachic.

Antaphrodisiacs.—Medicines which diminish the sexual passion: Ammonii

Bromidum, Camphora, Conium, Digitalis, Lupulinum, Potassii Bromidum, Potassii Iodidum, Sodii Bromidum, Sodii Iodidum.

Anthelmintics.—Medicines which destroy worms (Vermicides), or expel them from the alimentary canal (Vermifuges).

Vermicides: *Ascarides or Thread Worms*—Acid. Carbolic., Enemata Aceti, Aloes, Ferri Perchloridi, F. Sulphatis, Quassiæ, Sennæ, Sodii Chloridi, Ol. Ricini and Terebinthinæ, Santoninum.

Round Worm—Santoninum.

Tape Worm—Cusso, Embelia Ribes, Ammonii Embelas, Extractum Filicis Liquidum, Granati Rad. Cort. Dec., Pelletierinæ Sulphas and Tannas, Kamala, Terebinthinæ Oleum.

Vermifuges: Areca (for Round and Tape Worms), Calomel, Cambogia, Jalapa, Ricini Oleum, Scammonium.

Anthidrotics.—Medicines which check perspiration: Acid. Acetic., A. Salicylic, A. Sulphuric. Dilut., A. Tannic., Agaricus, Atropina, Belladonna, Ferri Sulphas, Ferri Mist. Comp., Hæmatoxyli Decoct., Hyoscyamus, Picrotoxinum, Quinina, Scopola, Strychnina, Zinci Oxidum.

Antidotes are placed under the several powerful drugs.

Antilithics.—Medicines which counteract a tendency to the formation of Calculi, or deposition of urinary sediments: Acid. Benzoic, Acid. Nitric. Dil., Acid. Phosph. Dil., Ammon. Benz., Lithiæ Liq. Efferv., Lithii Carb., Lithii Citras, Magnes. Liq. Efferv., Potassii Acetas, Potassii Bicarb., Potassii Carb., Potassæ Liq. Efferv., Potassæ Liquor, Sapo, Sodii Benzoas, Sodii Carb., Sodii Bicarb., Sodæ Liq. Efferv., Sodii Citro-tart. Efferv.

Mineral Waters—Mergentheim, Neuenahr, Selters, Tchitli, Vals, Vichy, Wildungen.

Antiparasitics.—Medicines which destroy vegetable and animal parasites: Acid. Sulphurosum, Cupri Oleas, Hydr. Ammoniatum, Iodi Pigmentum, Olea Expressa et Essent., Naphthalene, Pyrethrum Roseum, Quassia, Sodii Hyposulphis, Sozoiodol, Staphisagria, Sulphur, Tabacum.

Antiperiodics.—Medicines which have the property of interrupting periodical attacks of disease: Acid. Arsenios., Beberinæ Sulph., Berberis, Cinchonæ Extr. Liquid., Nectandræ Cort., Quinine Salts, Salicin, Sodii Chloridum.

Antipyretics.—Medicines which reduce the temperature in fever: Absinthium, Acid. Salicylic, Aconitum, Antifebrin, Antimon. Tart., Antipyrin, Chinolin, C. Tartras, Chloral Hydras, Exalgine, Kairine, Phenacetin, Physalis, Potassii Citras, Pyrodin, Quebracho, Quinina, Resorcin, Salicin, Salol, Spirit. Æther. Muriaticus, Thallinæ Sulphas.

Antiseptics.—Agents which prevent the decomposition of organic structures: Acid. Benzoic, Acidum Boric., Acid. Carbolicum, A. Chromicum, A. Cresylic, A. Hydrochloricum, A. Nitric., A. Pyrogallic, A. Pyroligneosum Crudum, A. Salicylic., A. Sulphurosum, A. Trichloracetic, Aluminii Acetatis Liquor, Alum. Aceto-Tartras, Alum. Chloridi Liquor, Alum. Oleatum, Ammon. Carb., Antifebrin, Antipyrin, Borax, Boro-Glyceride, Calx Chlorinata, Carbo Ligni, Carbonei Bisulphidum, Cerevisiæ Ferment., Chinolin, C. Tartras, Chlori Liquor, Chloroformum, Creasotum, Cupri Oleas, Eucalyptol, Glycerinum, Helenine, Hydrargyri Cyanidum, Hydrargyri Zinco-Cyanidum, Hydrargyri Perchloridum, Hydrargyri et Potassii Iodidum, Iodoformum, Iodol, Iodum, Menthol, Naphthalene, Naphthol, Potassa Sulphurata, Potass. Permanganas, Resorcin, Sal-Alembroth, Salolum, Sodæ Chlorinatæ Liquor, Sodii Benzoas, Sodii Chloridum, Sodii Sulphis, Sodii Sulphocarbolas, Sozoiodol, Terebinthinæ Oleum, Thallinæ Sulph., Thymol, Tribromphenol, Trichlorphenol, Zinci Chloridum, Zinci Sulphocarbolas.

Antispasmodics.—Medicines which allay or prevent the recurrence of spasms: Acid. Hydrocyanic. Dil., Æther, Ammonia, A. Carbonas, A. Spiritus Aromaticus, Ammoniacum, Amyl Nitris, Argenti Nitras, Asafœtida, Belladonna, Bromides, Cajuput. Ol., Calendula, Camphora, Camphora Monobromata, Cannabis Indica, Castoreum, Corii Oxalas, Chloral Hydras, Chloroformum, Cimicifuga, Conium, Euphorbia Pilulifera, Galbanum, Grindelia, Hyoscyamus, Lobelia, Moschus, Menth. Pip. Ol., Pil. Aloes et Asafœtidæ, Nitroglycerinum, Quebracho, Ruta, Spir. Ammon. Fœtid., Stramonium, Sumbul, Tabacum, Terebinthina, Valeriana and Valerianates, Zinci Oxidum, Zinci Sulphas, Zinci Valerianas.

Aperients.—*See* Cathartics.

Aphrodisiacs.—Medicines which excite sexual appetite: Belladonna, Cantharis, Damiana, Tinct. Ferri Perchlor., Nux Vomica (Strychnina), Phosphorus.

Aromatics.—*See* Carminatives.

Astringents.—Medicines which produce contraction of the tissues and coagulation of the albuminous fluids; they are given to improve digestion and check increased secretions, mucous discharges, and hæmorrhages; or applied topically to obviate relaxation and to stop bleeding.

Mineral Substances.—All the Diluted Mineral Acids, Aluminium Salts, Argenti Nitras, A. Oxidum, Borax, Cadmii Sulphas, Calamina, Calcii Carbonas, Carbolic Acid, Creasotum, Creta Præp., Cupri Sulphas, Ferri Perchlor. Liquor, F. Pernit. Liquor, F. Sulphas, Ferri et Quin. Cit., Plumbi Acetas, P. Carbonas, P. Oxidum, P. Subacetatis Liquor, Zinci Acetas, Z. Carbonas, Z. Chloridum, Z. Oxidum, Z. Sulphas, Z. Sulphocarbolas.

Vegetable Substances.—Acetum, Acid. Acetic. Dil., A. Gallic., A. Tannic., Bela, Catechu, Cinchona, Cinnamom, Cornin, Ergota, Erigerontis Oleum, Filix Mas, Galla, Geranin, Granati Rad. Cort., Guarana, Gummi Rubr., Hæmatoxylum, Hamamelis, Hydrastis, Krameria, Kino, Larix, Matico, Quercus, Rheum, Rosa, Rumicin, Symphytum, Terebinthinæ Ol., Ulmus, Uva Ursi, Vinca Major.

Carminatives.—Medicines which stimulate or aid the removal of flatus from the stomach and intestines, and relieve griping: Æther Aceticus, Anethi Ol., Anisi Ol., Camphor, Carbo Ligni, Cardamomum, Carui, Caryoph., Cinnamom, Coriander, Fœniculum, Juniper, Lavand. Ol., Limon. Ol., Menth. Pip. Ol., Myristica, Piper, Zingiber.

Cathartics.—Medicines which promote intestinal evacuations.

Mild or Laxative.—Belladonna, Cassiæ Pulpa, Euonymin, Fel Bovinum, Ficus, Glycyrrh. Pulv. Comp., Ipecac., Magnesia, M. Carbonas, M. Citratis Liquor, Manna, Mel, Menyanthes, Mori Succus, Nux Vomica, Olivæ Oleum, Potassii Sulphas, P. Tartras, Prunum, Rhamnus Frangula, R. Purshian., Ricini Oleum, Sapo, Sodii Citro-Tartras Effervescens, Sodii Phosphas, Sodii Sulphas, Soda Tartarata, Sulphur, Sulphur Præcip., Tamarindus, Taraxacum, Theriaca.

Actively Aperient.—Aloes Barb., A. Socot., Baptisin, Colchicum, Helleborus Niger, Iridin, Kamala, Leptandrin, Magnes. Sulphas, Podophyllin, Rheum, Senna, Sodii Sulphas.

Drastic or Hydragogue.—Bryonia, Cambogia, Colocynthis, Crotonis Oleum, Elaterium, Helleborus Niger, Hydrarg. Subchloridum, Jalapa, Potass. Tart. Acida, Scammonium.

Mineral Waters.—Achselmannstein, Birmenstorf, Carlsbad, Friedrichshall, Homburg, Hunyadi Janos, Kissingen, Marienbad, Pullna, Royal Hungarian Bitter Water (Buda-Pesth), Seidlitz.

Caustics.—Substances which destroy the vitality of the parts to which they are applied: Acid. Acetic. Glaciale, A. Arseniosum, A. Carbolicum, A. Chromicum, A. Nitricum, A. Sulphurici Pasta, Alum. Exsiccatum, Antim. Chlor., Argenti Nitras, Calx, Creasotum, Cupri Acetas, C. Subacetas, C. Nitras, C. Sulphas, Hydr. Iod. Rubr., Hyd. Ox. Rubr., H. Perchloridum, Hydr. Nitrat.

Acidus Liquor, Iodi Lin., Potassa Caustica, Potassa c. Calce, Potassii Permang., Soda Caustica, Sodii Ethylatis Liquor, Zinci Chloridum, Z. Nitras.

Cholagogues.—Agents which cause a flow of bile into the intestines: Aloes, Ammonii Chloridum, Euonymus, Hydrarg. Pil., Hyd. cum Cret., Hydrarg. Subchlor.(?), Hydrarg. Perchloridum, Hydrastis, Ipecacuanha, Phytolaccin, Podophyllin.

Mineral Waters.—Ems, Friedrichshall, Hungarian, Hunyadi Janos, Kissingen.

Demulcents.—Substances which soften and allay irritation of mucous membranes: Acaciæ Gum., Althæa, Amygdala Dulc., Amylum, Cetaceum, Cetraria, Carrageen, Cydonii Semen, Ficus, Glycerinum, Glycyrrhiza, Hordeum, Ichthyocolla, Lini Oleum, Maranta, Mel, Morrhuæ Oleum, Olivæ Oleum, Ovi Albumen, Salep, Sevum, Theriaca, Tragacantha, Triticum Repens, Ulmi Cortex, Uvæ.

Deodorizers.—Substances which destroy offensive odours: Chlorine and its oxides, Acid. Sulphuros., Acid. Nitric, Carbo, Calx, Eucalypti Ol., Ferri Oxid., Ferri Sulph., Hydrogenii Peroxidum, Iodol, Plumbi Nitras, Potass. Permang., Thymol, Trichlorphenol, Zinci Chloridum.

Desiccants.—Agents which check secretion, and dry up mucous discharges from ulcers and wounds: Bismuth. Subnit., Calcii Carbonas, Calcii Hydras, Creta Præparata, Magnesii Carbonas, Plumbi Acetas, P. Carbonas, Talc., Zinci Oxidum.

Diaphoretics.—Medicines which increase the action of the skin and produce sweating. Employed in fresh colds, in fevers, dropsy, and some skin diseases: Æther, Alcohol, Ammonii Acetatis Liquor, Ammon. Carbonas, Ammon. Chlorid., Ammon. Phosphas, Antimonialis Pulvis, Antim. Tartar. Vinum, Antim. Sulphurat., Armoracia, Buchu, Cajuputi Sp., Calendula, Camphor, Chloroform, Colchici Vin., Doveri Pulv., Dulcamara, Grindelia, Guaiaci Ammon. Tinct., Ipecac. Pulv., Ipecac. Vin., Jaborandi, Lactuca, Lobelia, Morphina, Opium, Pilocarpina, Potassii Citras, Potass. Nitras, Sabina, Sassafras, Senega, Simaruba, Serpentaria, Sp. Ætheris, Nit. Sulphur, Spir. Camphoræ, Terebinthinæ Oleum.

Disinfectants.—Substances which act on the specific poisons of communicable diseases so as to prevent their spreading: Acid. Carbol., Acid. Nitrosum, Acid. Sulphurosum, Aluminii Chloridi Liquor, Calx Chlorinata, Chlorine, Iodoformum, Iodol, Iodum, Naphthol, Potass. Permang., Condy's Fluid, Potass. Bichrom., Ferri Sulphas, Hydrogenii Peroxidum, Sodæ Chlorinatæ Liquor, Thymol, Zinci Chloridum (Burnetts's Solution).

Diuretics.—Medicines which promote the secretion of urine: Acid Benzoic, Alcohol, Ammon. Acet. Liq., Ammon. Benzoas, Ammon. Chlorid., Apocynum, Armoracia, Borax, Buchu, Caffeina, Cantharis, Caulophyllin, Colchicum, Convallaria, Copaiba, Copaibæ Resin., Cubeba, Damiana, Digitalis Inf., Dulcamara, Erigerontis Ol., Euonymin, Hemidesmi Radix, Iridin, Juniperi Oleum, Lactuca, Lithiæ Efferv. Liquor, Paraldehyde, Pix Liquida, Potassæ Efferv. Liq., Pareiræ Decoct., Physalis, Potassii Acetas, Potassii Nitras, Potassii Tartras Acida, Potassii Tartras, Potassii Bicarb., Potassii Carb., Potassii Chloras, Potassii Citras, Potassii Nitras, Potassæ Liquor, Senegæ Inf., Senecionin, Scoparius, Scilla, Simaruba, Sodii Bicarb., Sodii Phosphas, Sparteina, Spirit. Ætheris Nit., Tabaci Folia, Terebinthinæ Ol., Ulexine, Ulmi Decoctum, Uva Ursi.

Mineral Waters.—Friedrichshall, Kissingen, Leuk, Shap.

Ecbolics.—Substances which promote the contraction of the uterus and facilitate the expulsion of the contents: Borax, Cimicifuga, Digitalis, Ergota, Hydrastinæ Hydrochloras, Sabina.

Emetics.—Medicines which excite vomiting: Alum (in repeated doses), Anthemis, Antimonium Tartaratum, Apomorphinæ Hydrochloras, Baptisin, Cupri Sulphas, Ipecacuanha, Sinapis Pulvis, Sodii Chloridum, Tabacum, Veratrum Viride, Zinci Acetas, Zinci Sulphas.

Emmenagogues.—Medicines which maintain or restore a healthy condition of the menstrual discharge, and increase the quantity: Aloes Decoctum Co., Aloes et Myrrhæ Pil., Ammonii Chloridum, Apiol, Borax, Calendula, Cimicifuga, Ergota, Ferrum Redactum, Gossypii Tinctura, Helleborus Niger, Manganesii Oxid. Præp., Potass. Permang., Quinina, Ruta, Sabina, Senecionin, Senega.

Emollients.—Substances which soften and relax the tissues, also such as protect sensitive surfaces; employed to allay irritation: Adeps, Amygdalæ Oleum, Cera Alba, Cetaceum, Collodium, Cydonium, Glycerinum, Glycer. Amyli, Lini Farina, Olivæ Oleum, Sevum.

Escharotics.—*See* Caustics.

Expectorants.—Medicines which promote the secretion of bronchial mucus: Acid. Benzoicum, Æther, Ammonia, Ammonii Benz., Ammonii Carb., Ammonii Chloridum, Ammoniacum, Anisi Oleum, Antimonium Tartaratum, Apomorphinæ Hydrochlor., Asafœtida, Bals. Peruv., Bals. Tolut., Benzoin, Copaiba, Cubeba, Euonymin, Galbanum, Ipecacuanha, Laricis Cortex, Lobelia, Myrrha, Pix Liquida, Quillaia, Scilla, Senega, Styrax Præp., Tabacum, Vapores Acidi Carbolici, Chlori, Creasoti, and Iodi.

Febrifuges.—*See* Antipyretics.

Hæmatinics.—*See* Tonics, Blood.

Hæmostatics.—*See* Styptics.

Hypnotics.—(Soporifics)—Medicines which induce sleep: Amyl Nitris, Boldo, Butyl-chloral, Camphora Monobromata, Cannabis Ind., Chloral, Chloralamid, Chloroformum, Codeina, Conium, Creasotum, Hyoscyamus, Hyoscina, Hypnone, Lupulus, Methylal, Morphina, Morphinæ Bimeconatis Liquor, Narceina, Opium, Papaver, Paraldehyde, Piscidia, Potassii Bromidum, Sodii Bromidum, Sulphonal, Somnal, Urethane, Stramonium.

Irritants.—Substances which stimulate and cause irritation or inflammation of the parts to which they are applied; they differ in their intensity of action and may be divided as follows:—

> **Rubefacients.**—Agents which, when applied to the skin, produce local warmth and redness: Æther, Alcohol, Ammoniæ Liquor, Emp. Calefaciens, Emp. Picis, Lin. Camphoræ Co., Lin. Capsici, Lin. Chloroformi, Lin. Iodi, Lin. Sinapis Co., Mezereum, Ol. Cajuputi, Oleum Limonis, Ol. Rosmarini, Ol. Rutæ, Ol. Succini, Ol. Terebinth., Ung. Elemi.
>
> **Vesicants.**—Those which raise a vesicle or blister: Acidum Aceticum Glaciale, Ammoniæ Liquor Fortior, Cantharis.
>
> **Pustulants.**—Those which produce a pustule: Antimonium Tartaratum, Argenti Nitras, Crotonis Oleum.

Laxatives.—*See* Cathartics.

Mydriatics.—Drugs which produce dilation of the pupil of the eye: Atropina, Belladonna, Daturina, Duboisinæ Sulphas, Homatropina, Homatropinæ Hydrobromas, Hyoscyamus, Scopola.

Myositics.—Drugs which contract the pupil: Physostigmina, Pilocarpina.

Narcotics.—*See* Hypnotics.

Nutritives.—Substances which quicken assimilation and improve the condition of the living tissues: Acaciæ Gum., Amygdala Dulc., Bynes Extractum, Carnis Extract., Carrageen, Cetrariæ Decoctum, Ficus, Glycerinum

Lac, Manna, Maranta, Morrhuæ Ol., Olivæ Oleum, Ovi Vitellus, Prunum, Sacch. Lactis, Salep, Sevum, Sp. Vini Gallici Mist., Theriaca, Uvæ.

Purgatives.—*See* Cathartics.

Refrigerants.—Medicines which diminish the body-heat and quench thirst: Aqua, Acidum Aceticum, A. Citricum, A. Hydrochlor., A. Nitric Dil., A. Phosph. Dil., A. Tartaricum, A. Sulph. Dil., Ammon. Acet. Liquor, Aurantii Succus, Limonis Succus, Magnesii Citratis Liquor, Mori Syrup., Oxymel, Potass. Citras, Potass. Chloras, Potass. Nitras, Potass. Tart. Acida, Prunum, Sp. Æther. Nitr., Sp. Æther. Muriaticus, Tamarindus.

Sedatives.—Medicines which exert a soothing influence upon the system, by diminishing pain, lessening functional activity, or tranquillizing disordered muscular movement:

Local.—Acid. Carbol., Acid. Hydrocyan., Atropina, Belladonna, Borax, Chloral, Creasotum, Morphina, Opium, Plumbi Acetas, P. Subacetatis Liquor. *See also* Anæsthetics, Local, *and* Anodynes.

Pulmonary.—Acid. Hydrocyanic., Ammon. Bromid., Belladonna, Cerii Oxalas, Conium, Gelsemium, Laurocerasi Aqua, Lobelia, Morphina, Opium, Prunus Virginiana, Stramonium.

Spinal.—Ammonii Bromidum, Camphora Monobromata, Gelsemium, Magnesii Bromidi Liquor, Niccoli Bromidum, Physostigma, Potassii Nitras, Potassii Bromidum, Sodii Bromidum, Veratrum Viride, Viburnum, Zinci Bromidum.

Stomachic.—Acid. Arseniosum, Acid. Carbolic., Acid. Hydrocyan., Acid. Phosph. Dil., Alcohol Methylicum, Argenti Nitras, Belladonna, Bismuth Salts, Calcis Liquor, Cerii Oxalas, Chloral, Chloroform, Cocainæ Hydrochlor., Creasotum, Hydrarg. c. Creta, Hyoscyamus, Opium, Potass. Bicarb., Potass. Liquor Effervescens, Sodii Bicarb., Sodii Liquor Effervescens, Sodii Bromidum, Zinci Oxidum.

Vascular.—Acidum Hydrocyanicum, Aconitum, Amyl Nitris, Antim. Tart., Apocynum, Aqua Laurocerasi, Colchicum, Digitalis, Ergota, Ipecacuanha, Nitroglycerinum, Plumbi Acetas, Potass. Nitras, Sodii Nitris, Spirit. Æther. Nit., Tabacum, Veratrum Viride.

Sialagogues.—Medicines that increase the secretion of the saliva: Æther, Armoracia, Hydrargyrum and its salts, Iodides, Jaborandi, Mezereum, Physostigma, Pilocarpina, Piper, Pyrethrum, Rheum, Sinapis, Tabacum, Zingiber.

Soporifics.—*See* Hypnotics.

Sternutatories.—Medicines which increase the nasal mucous secretion, which is sometimes accompanied by sneezing: Ipecacuanha (powdered), Tabacum (snuff), Veratrum Viride (powdered).

Stimulants.—Medicines which increase the natural function of a part, or which cause a slight degree of superficial irritation.

General.—Æther, Alcohol (in small doses), Ammonia, Arnica, Cajuputi Oleum, Phosphorus.

Spinal.—Acid. Benzoic., Æther, Arnica, Ammon. Carb., Belladonna, Cannabis Ind., Cantharis, Ergota, Morphina, Nux Vomica, Oleum Cajuputi, Opium, Phosphorus, Strychnina, Thebaia.

Stomachic.—*See* Carminatives.

Vascular.—Æther, Alcohol, Ammonia, Ammoniacum, Castoreum, Galbanum, Guaiacum, Mezereum, Sassafras, Sumbul, Terebinthinæ Oleum, Valeriana.

Local.—*See* Irritants.

Mineral Waters.—Alexandersbad, Baréges, Cauterets, Kreuznach, St. Moritz.

Stomachics.—Medicines which directly promote the functions of the stomach and improve the appetite and digestion, *see* Carminatives *and* Tonics, Stomachic.

Styptics.—Remedies which arrest bleeding: Acetum, Acid. Gallicum, Acid. Sulphuric. Dil., Acid. Tannic., Alumen, Benzoin, Bryonia, Catechu, Cinchona Pulvis, Collodium, Creasote, Cupri Sulphas, Ergota, Erigerontis Oleum, Ferri Perchlor. Liquor and Tinct., Ferri Persulph. Liquor, Gallæ, Granati Rad. Cort., Gummi Rubri Extractum Liquidum, Hamamelis, Hydrastis, Kino, Krameria, Matico, Quercus, Plumbi Acetas, Plumbi Subacetatis Liquor, Spiritus Rectificatus, Zinci Acetas, Zinci Sulph.

Sudorifics.—*See* Diaphoretics.

Tonics.—Therapeutic agents which impart strength or tone to the body or its parts.

Acting through the blood, and improving its quality.—Ferri Acetatis Liquor, F. Albuminas, F. Bromidum, F. Carb. Saccharata, F. Ammonii Citras, F. Quininæ et Citras, F. Chloroxydum, F. Iodidum. F. Liquor Dialysat., F. Lactas, F. Oxid. Magnet., F. Perchlor., F. Pernit. Liquor, F. Phosphas, F. Phosph. Co. Syrup. (Squire), F. Redactum, F. Sulphas, F. Tartaratum, Easton's Syrup, Morrhuæ Oleum, Potass. Permang., Sarsæ Radix.

Nervine.—Acid. Arseniosum, Argenti Nitras, Argenti Oxidum, Cerii Oxalas, Cinchona, Coca, Cupri Sulphas, Damiana, Ferrum Salts, Nux Vomica, Phosphorus, Sodii Hypophosphis, Strychnina, Zinci Acetas, Zinci Oxidum, Zinci Sulph.

Stomachic and Intestinal.—Absinthium, Acid. Hydrochlor. Dil., A. Nitric. Dil., A. Nitro-hydrochlor. Dil., A. Phosph. Dil., A. Sulph. Dil., Anthemis, Aurant. Cort., Balsam. Peruvian., Beberinæ Sulphas, Buchu, Calumba, Canellæ Cortex, Cascarilla, Chiretta, Cinchona, Cinchonidina, Cinchonina, Cusparia, Decoct. Aloes Comp., Gentiana, Guarana, Hydrastis, Limonis Cortex, Lupulus, Menyanthes, Nectandra, Nux Vomica, Pancreatic Enzymes, Pepsin, Peptonised Foods, Pareira, Quassia, Quininæ Sulph., Rheum, Salicin, Serpentaria, Simaruba, Strychnina.

Vascular.—Adonis, Apocynum, Caffeina, Convallaria, Digitalis, Erythrophlæum, Ferrum Salts, Nux Vomica, Scilla, Sparteina, Strophanthus, Strychnina, Veratrum Viride.

Mineral Waters.—Adelheidsquelle, Alet, Altwasser, Auteuil, Berka, Bocklet, Gastein, Kreuznach, Meinberg, Orezza, Ottilienquelle, Pyrmont, St. Moritz, Spa, Schwalbach, Wildungen.

Eclectic Tonics.—Cornin (stimulant astringent), Hydrastin and Menispermin (dyspeptic), Cimicifugin and Scutellarin (Nervine sedative).

Vermicides and Vermifuges.—*See* Anthelmintics.

Vesicants.—*See* Irritants.

SECTION B.

REMEDIES EMPLOYED IN SPECIAL AILMENTS.

Abscess, Acute. Internally: Aconite, Belladonna, Sulphides. *Locally:* Glycerinum Belladonnæ, Iodoformum, Iodum, Acid Boric., A. Carbolicum, Pot. Permang., &c.

—— *Chronic. Internally:* Potassii Iodidum. *Locally:* Hydrargyri Oleatum c. Morphina.

Acne. Internally: Liquor Arsenicalis, Vinum Ferri, Confect. Sulphur. *Locally:* Ung. Sulphuris Hypochlor., Ung. Sulphuris Iodidi, Hydrarg. Perchlor. (lotion), Ichthyol, Potassa Sulphurata, Lotio Zinci Oxidi, Belladonna.

Ague.—See *Fever, Intermittent.*

Albuminoid Degeneration. Ammon. Chlorid., Ferrum Salts, Morrhuæ Ol., Pot. Bicarb., Pot. Citras.

Albuminuria. Acid. Gallicum, Amyl Nitris, Digitalis, Ergota, Ferri Perchlor. Tinct., Nitroglycerine.

Alcoholism. Absinthium, Ammoniæ Acetat. Liquor, Ammon. Carb., Armoracia, Arsenic, Calumba, Capsicum, Cimicifuga, Cocainæ Hydrochlor., Gentiana, Lupulus, Nux Vomica, Opium, Quinina, Strychnina. See also *Delirium Tremens.*

Alteratives.—Section A.

Amenorrhœa. Aconite, Aloes, Auri et Sodii Chloridum, Ergota, Ferri Bromidi Syrupus, Ferri Carb. Sacch., Ferri Lactas, Ferri Phosphas, Ferrum Redactum, Mistura Ferri Co., Menyanthes, Myrrha, Potass. Permang., Apiol Capsules, Rutæ Oleum, Santoninum.

Anæmia.—See *Tonics, Blood,* Section A.

—— *Pernicious.* Acid. Arseniosum.

Anæsthetics.—Section A.

Anasarca.—See *Dropsy.*

Aneurism. Potassii Iodidum, Potassii Nitras.

Angina Pectoris. Æther, Amyl Nitris, Argenti Nitras, Acid. Arseniosum, Acid. Hydrocyanic., Belladonna, Morphina (hypoderm.), Nitroglycerine, Pyridin, Sodii Nitris Purus, Zinc. Sulph.

Anodynes.—Section A.

Antacids.—Section A.

Antalkalines.—Section A.

Antemetics.—Section A.

Anthelmintics.—Section A

Anthidrotics.—Section A.

Anthrax. Acid. Carbolic. (injection), Chloride of Zinc Points. Ipecacuanha (internally and locally).

Anti-Anæmics.—Section A.

Antidotes.—Section A.

Antilithics—Section A.

Antiparasitics.—Section A.

Antiperiodics.—Section A.

Antipyretics.—Section A.

Antiseptics.—Section A.

Antispasmodics.—Section A.

Aperients.—Section A.

Aphrodisiacs.—Section A.

Aphthæ. Alum (pulv.), Argenti Nitras, Glycerinum or Mel Boracis, Confect. Rosæ Gall., Myrrha, Potass. Chloras, Sodii Sulphis.

Apoplexy. Aloes, Croton. Ol., Terebinth. Enema, Hydrarg. Subchlor.

Aromatics.—Section A.

Ascarides.—See *Anthelmintics.*

Ascites.—See *Dropsy.*

Asthma. Acidum Arseniosum, Acid. Hydrocyanicum Dilutum, Aconitum, Æthyl Iodidum, Ammon. Fœtid. Spirit., Ammoniacum, Amyl Nitris, Belladonna, Butyl-Chloral Hydras, Camphor, Cannab. Ind., Chloral, Chloroformum, Charta Nitrata, Balsam. Peruvian., Eucalypti Ol., Euphorbia Pilulifera, Grindelia Robusta, Hyoscyamus, Ipecacuanha, Lobelia, Myrrha, Nitro-glycerine, Potass. Bromid., Pot. Iod., Pyridin, Quebracho, Sodii Nitris Purus, Stramonium, Pulv. Stramonii Comp., Tabaci Folia.

Astringents.—Section A.

Baldness. Acetum Cantharidis, Liniment Ammon., Lin. Camph. Co., Lin. Chloroformi, Linimentum Crinale, Lin. Crotonis, Lin. Sinapis Co., Lotio Crinalis, Lotio Stimulans, Pilocarpina.

Bed Sores. Argenti Nitras, Acid. Sulphuros., Amadou, Balsami Peruviani Ung., Collodium, Plumbi Tannici Ung., Zinci Oxid. Ung.

Bile, deficiency of. Fel Bovinum. *See Cholagogues.*

Biliary Calculi. See *Gall-stones.*

Bites of fleas, to prevent. Lavaud. Ol., Pyrethrum Roseum, Camphora.

Bites and Stings of Insects (ants, bees, gnats, mosquitoes, wasps). Liquores Ammoniæ, Potassæ, Sodæ, Plumbi Subacetatis; Chloroform, Ipecacuanha, Oleum Carbolisatum, Olea Olivæ and Pulegii.; *all locally.*

Bites of Rabid Animals. Cautery.

Bites of Snakes. Liquor Ammoniæ, Liq. Potass. Permang.; Cautery.

Bladder, irritable. Belladonna, Cannabis Ind., Chloral Hydras, Hyoscyamus, Opium. *Mineral Waters:* Fachingen, Malvern, Pougues, Langenbrücken, Luhatschowitz. See also *Cystitis.*

Blennorrhœa.—See *Gonorrhœa.*

Blister, to heal. Unguent. Cetacei.

,, *to keep open.* Ung. Mezerei, Ung. Sabinæ.

Blood restorers.—See *Tonics.*

Boils. Internally: Calx Sulphurata, Cerevisiæ Ferment. *Locally:* Glycerinum Belladonnæ, Camphor. Spir., Collodium, Menthol, Opium.

Bones, Fracture of. Locally: Symphytum. *Internally:* Calcii Phosphas.

Bowels, Torpidity of.—See *Cathartics.*

Brain, Inflammation of.—See *Meningitis.*

Breast, Inflammation of. Glycerinum Belladonnæ, *locally:* Phytolocca, *internally* and *locally.*

Breath, Fœtor of. Acid. Carbolic., Glycer. Acid. Carbolic., Camphor, Carbo Ligni, Creasote, Pepsin, Potass. Chloras, Potass. Permang.

Bright's Disease, Acute Inflammatory: Aconite, Ammon. Carb., Belladonna, Cannabis Ind., Copaiba, Digitalis, Elaterium, Tinct. Ferri Perchlor., Pulv. Jalapæ, Juniper Ol., Pilocarpin., Pot. Acetas, Pot. Tart. Acid., Scilla, Scoparium, Spir. Ætheris Nitrosi.

—— *Albuminoid.* Tinct. Ferri Perchlor., Nux Vomica, Quinine, Easton's Syrup.

—— *Cirrhotic.* Nitroglycerine. See also *Albuminuria, Dropsy* (*renal*) and *Uræmia.*

Bronchitis, Acute. Acid. Benzoic., Aconitum, Æther, Ammoniacum, Ammonii Carbon., Ammon. Chloridum, Antim. Tart., Apomorphina, Asafœtida, Tinct. Camph. Co., Chloral, Sp. Chlorof., Cimicifuga, Ferri et Am. Citras, Tinct. Ferri Acet. Æther., Galbanum, Ipecac., Larix, Lobelia, Plumbi Acet., Scilla, Croton. Lin., Senega, Sinapis Cataplasma, Terebinth. Confectio. *Mineral Waters:* Kronthal, Labassère, Landeck, Langenbrücken, Lippspringe, Luhatschowitz, Neuenahr.

—— *Chronic.* Æthyl Iodidum, Iodi Lin. and Vapor, Asafœtida, Bals. Peru and Tolu, Tinct. Benz. Co., Chloral, Conini Vapor, Copaiba, Creasot. Vapor, Eucalypti Ol., Euphorb. Pilulif., Grindelia, Lobelia, Opium, Pini Pumil. Ol., Pini Sylvest. Ol., Quillaia, Quinina, Senega, Serpentaria, Tar Syrup, Tar Water, Terebene.

Bronchocele. Acid. Fluoric. Dil., Hyd. Iodid. Rub. Ung., Iodum, Potass. Iodid.

Brow Ague. See *Neuralgia.*

Bruises. Acetum, Acid. Acetic. Dil., Alum, Anthemis, Arnica, Capsicum, Hamamelis, Plumb. Subacet. Dil. Liq., Saponis Linim., Sodii Chlorid., Sp. Vini Rect., Ammon. Chloridi Lotio.

Bubo, Acute: Glycer. Belladonnæ, Iodoform, Lotio Acidi Carbolici, Liquor Chlori.

—— *Indolent.* Lotio Plumbi Subacet., Unguentum Zinci.

—— *Chancrous.* Acid. Carbol., Argent. Nitras, Liq. Hydrarg. Nit. Acid., Potassa cum Calce.

Bunions. Amadou Plaster.

Burns and Scalds. Acid. Borici Ung., Oleum Carbolicum, Acid. Salicyl. Lotio, Calcis Lin, Calcii Carbonas, Calcis Chlorin. Liquor, Carron Oil, Cocaina, Collodion, Creasotum, Creta Præpar., Eucalyptus Gauze or Oil, Iodoform and Vaselin, Flour, Gossypium, Lini Oleum, Olivæ Oleum, Starch, Sp. Vini Rect., Terebinth. Oleum.

Bursitis, Acute: Acid. Carbol. (inject), Blister, Tinct. Iodi (paint or inject), Zinc. Chlorid. (inject).

Calculus, Renal. See *Colic, Renal.*

Calculi, Lithic Acid. Ammon. Benz., Ammon. Boras, Ammon. Phosph., Lithium Salts, Potassii Acetas, P. Bicarb., P. Carb., P. Citras, P. Nitras, Sodii Bicarb. *Mineral Waters:* Carlsbad, Fachingen, Friodrichshall, Pullna, Vals, Vichy, Wiesbaden.

—— *Phosphatic.* Acid. Benzoic., Ac. Nitric. Dil., Acid. Phosph. Dil., Pareiræ Extr. Liquid., Tonics.

Cancer. Locally: Acid. Carbol., Acid. Nitric., Acid. Sulph. (Nordhausen), Arsenical Paste, Glyc. Acid. Tannic., Antim. Chlorid., Conium, Hydrarg. Nit. Acid. Liq., Iodoform, Potassa cum Calce, Potass. Permanganas, Zinci Chloridum. *Internally:* Chloral Hydras, Conium, Opium, Terebinth. Chia.

Carbuncles. See *Boils.*

Carminatives.—Section A.

Catarrh of the Respiratory Organs. Aconitum, Ammoniacum, Ammon. Chlor., Sp. Ammon. Fœtid., Amygdala Dulc., Apomorphia, Bals. Peruv., Benzoin Vapor and Insufflat., Cetraria, Dulcamara, Eucalyptol, Ferrier's Snuff, Glycyrrhiza, Ipecacuanha, Lini Semen, Lobelia, Sp. Æther. Nit., Myrrha, Opium, Pix Liquid., Quininæ Sulph., Senega, Syr. Pruni Virg.

—— *Vesical.* See *Cystitis.*

Chafing of Skin. Dusting Powder, Starch, Violet Powder.

Chalk Stones in Gout. Ammonii Benzoas.

Cathartics.—Section A.

Caustics.—Section A.

Chancres. Acid. Nitric., Acid. Pyrogall., Acid. Sulphuros., Argenti Nitras, Eucalyptol, Bismuthi Subiodid., Iodoform, Iodol, Hydrarg. Lotio Nigra, Hydr. Nitrat. Liq. Acid., Hydr. Ox. Rubr. *All locally.*

Chaps. Cerat. Camphor., Glycerini Unguentum.

Chilblains. Alum Poultice, Argenti Nitras, Boracis Ung., Calcis Chlorinatæ Liq., Capsici Liniment. or Tinct. Fort., Creasotum, Glycerinum, Iodi Unguent.

Chlorosis. Acid. Hydrochloric. Dil., Ferri Bromidi Syrup., Ferri Chlorox. Liq., Ferri Lactas, Ferri Perchlor. Tinct., Ferrum Redactum, Ferri Sulphas, Myrrha, Niccoli Sulphas. *Mineral Waters:* Contrexville, Franzensbad, Rippoldsau.

Cholagogues.—Section A.

Cholera. Acid. Tannic (enema), Ammon. Carb., Argenti Nitras, Camphor, Capsicum, Chlorodyne, Board of Health Cholera Mixture, Creasotum, Pulv. Salinus (Dr. Stevens), Sodii Chlorid., Sumbul.

—— *Infantum.* Acid. Lacticum, Acid. Salicylicum, Acid. Sulph. Dil., Creasotum, Glycerinum Boracis, Hydr. Subchlor., Menth. Pip. Ol., Resorcin, Rheum, Ol. Ricini.

Chordee. Belladonna, Camphor, Lupulinum, Opium, Potassii Bromidum.

Chorea. Antipyrin, Argenti Nitras, Arsenic. Liquor, Camphora Monobrom., Cerii Oxalas, Chloral, Cimicifugin, Conium, Cupri Sulphas, Curare, Ferrum Redactum, Hyoscyamus, Nux Vomica, Physostigma, Ruta, Valeriana, Zinci Sulphas, Zinci Valerianas.

Cold in the Head.—See *Coryza.*

Colic, Intestinal: Æther, Ammonia, Belladonna, Opium.

—— *Biliary:* Æther, Chloroform (inhalation), Opium. Hot baths.

—— *Renal:* Chloroform (inhalation) and Opium. Hot baths.

Conjunctiva, Inflammation of. See *Ophthalmia.*

Constipation. Aloes Decoct. Co., Belladonna, Cambogia, Cascara Sagrada, Cassiæ Pulp., Colocynth. Pil. Co., Croton Ol., Elaterini Pulv. Co., Ficus, Glycerine (enema), Glycyrrh. Pulv. Co., Hydrarg. Subchlor., Iridin, Jalap, Magnesia, Magnesiæ Sulph., Manna, Mel, Nux Vomica, Olivæ Ol., Potass. Tart. Acid., Ricini Ol., Rheum, Sapo Castil., Scammonium, Senna, Soda Tartarata, Sodii Phosphas, Sulphur, Tabaci Enema. *Mineral Waters:* Carlsbad, Carlsbad Salt, Friedrichshall, Hunyadi Janos, Pullna.

—— *of Infants.* Cassiæ Pulpa, Cascara Elixir, Glycyrrh. Pulv. Co., Magnesia, Rhei Pulv. Co., Ricini Oleum, Scammon. Pulv. Co., Sennæ Syrupus.

—— *Habitual:* Belladonna, Cascara Sagrada, Cassiæ Pulpa, Senna.

—— *Obstinate:* Cambogia, Colocynthis, Croton. Ol., Guaiacum, Tabaci Enema, Podophyllin.

Consumption. See *Phthisis.*

Convalescence from Acute Disease. Acid. Sulph. Dil., Calumba, Cascarilla, Chirata, Cinchona, Cusparia, Guarana, Quassia.

Convulsions. Ammon. Fœtid. Sp., Belladonna, Chloral Hydras, Chloroform, Opium, Potass. Bromid., Rutæ Oleum, Enema Terebinth.

Cornea, Abscess of. Abri Infusum.

—— *Inflammation and Ulceration of:* Argenti Nitras, Belladonna, Hydrarg. Ox. Flav. Ung., Physostigmina.

Corns. Acid. Aceticum Glaciale, Ammon. Chlorid., Argent. Nitras, Collodium Salicylicum, Cupri Oleatis Unguentum, Plumbi c. Sapone Emp.

Corpulency.—See *Obesity.*

Coryza. Acid. Tannic., Benzoini Vapor and Insufflatio, Camphoræ Spiritus, Ferrier's Snuff, Sodii Chloridum, Zinci Oxidum.
Cough. Acid. Sulph. Dil., Antim. Vinum, Acaciæ Gum., Amygdalæ Aqua and Mistura, Apomorphina, Bals. Tolu, Cetaceum, Codeinæ Syr. and Pastilles, Conium, Copaiba, Cubeba, Glycerinum, Glycyrrhiza, Ipecacuanha, Lini Semen, Lobelia, Morphinæ Troch., Scilla, Styrax Præp. See also *Expectorants*, Section A.
—— *Chronic.* Benzoin. Tinct. Co., Cerii Oxalas.
—— *Spasmodic.* Acid. Hydrocyan. Dil., Belladonna, Cannabis Indica, Ammon. Brom., Butyl-Chloral Hydras, Tinct. Camph. Comp., Cerii Oxalas, Conium, Hyoscyamus, Pruni Virg. Syrupus, Stramonium.
—— *Tickling.* Acaciæ Gum., Acid. Phosph. Dil., Morphina, Cannab. Ind. Tinct.
Cramp. See *Antispasmodics.*
Croup. Aconite, Apomorphina, Emetics, Alum, Antim. Tart., Cupri Sulph., Ipecacuanha, Lobelia.
Locally: Papain.
Externally: Camph. Linim. Co.
Cutaneous Diseases. See *Eczema, &c., &c.*
Cystitis. Acid. Benzoic., Ammonii Benzoas, Betol, Buchu, Collinsonia, Hydrastis, Naphthalene, Pareira, Injections of Boric Acid, Quinine or Thymol.

Dandriff. Borax Lotion.
Deafness. Amygdalæ Oleum, Glycerinum, Pilocarpina (hypodermic).
Delirium. Antim. Tart., Belladonna, Cannabis Indica, Hyoscyamina, Hyoscina, Methylal, Opium, Potass. Bromidum.
—— *Tremens.* Ammoniæ Liquor, Antim. Tart., Cannabis Indica, Camphora Monobrom., Capsicum, Chloral Hydras, Digitalis, Hyoscyamina, Hyoscina, Opium, Potass. Bromid., Strychnina.
Demulcents.—Section A.
Depilatory. Calx Sulphurata.
Desiccants.—Section A.
Diabetes. Acid. Phosphor. Dil., Almond Cakes, Antipyrin, Arsenii Bromidi Liquor, Creasotum, Codeina, Ferri Perchlor. Tinct., Ferri Phosphas, Morphina, Pilocarpina, Phosphorus, Potass. Permanganas, Saccharinum, Sodii Salicylas. *Mineral Waters:* Carlsbad, Vichy.
—— *Insipidus.* Ergota.
Diaphoretics.—Section A.
Diarrhœa. Acid. Carbolicum, Acid. Nitric Dil., Acid. Phosph. Dil., Acid. Sulph. Dil., Acid. Tannic., Amylum, Belæ Fructus, Bismuthi Subnitras, Calcis Liquor, Calcii Carbon., Calcis Sacch. Liquor, Camphoræ Essentia, Capsicum, Castoreum, Catechu, Creta Præp., Cholera Mixture, Doveri Pulv., Granati Cort., Guarana, Gummi Rubrum, Hæmatoxylum, Hydrarg. cum Creta, Kino, Naphthol, Opium, Plumbi Acetas, Quininæ Carbolas, Rhei Tinct., Ricini Oleum, Simaruba, Dr. Stevens's Pulvis Salinus.
—— *Chronic:* Cascarilla, Coto, Cupri Sulph., Cinchona, Ferri Pernit. Liquor, Hæmatoxylum, Krameria, Plumbi Acetas, Quininæ Sulph., Simaruba.
Disinfectants.—Section A.
Diphtheria. Acid. Carbolic. Glycerin., Acid. Hydrochloric, Acid. Lacticum (spray), Acid. Sulphuros. (spray), Argenti Nitras, Chloral Hydras, Chlori Liquor, Eucalyptol, Ferri Perchlor. Liq. Fort., Glycerin., Helenine, Iodi Tinct., Iodoform, Iodol, Magnes. Boratis Liquor, Mag. Sulphis, Papain, Phenol Camphor, Potas. Chloras, Potas. Permanganas, Quininæ Sulphas, Sodæ Chlorinatæ Liquor.
Dipsomania. Capsicum.
Diuretics.—Section A.
Dropsy, in all forms. Ammon. Benzoas, Ammon. Chlorid., Buchu, Cajuputi Ol., Cambogia, Colchicum, Croton. Ol., Hydrarg. Subchlor., Jalapa, Juniperi Oleum, Lactuca, Nux Vomica, Potass. Acet., Potass. Iodidum, Potass. Tart. Acid., Scilla, Scoparius, Spir. Ætheris Nitrosi, Veratrum Viride.
—— *Cardiac:* Apocynum, Caffeina, Convallaria, Digitalis, Elaterium, Sparteina, Ulexine, Veratrum Viride.
—— *Hepatic:* Ammon. Chlor., Copaiba, Hydrarg. Subchlor., Taraxacum.
—— *Renal:* Ammon. Acetat. Liquor, Copaiba, Elaterium, Juniperi Oleum, Pilocarpina, Potassii Iodidum.
Dysentery. Acidum Tannicum, Bela, Cascarillæ Infus., Cubebæ Oleum, Cupri Sulph., Cuspariæ Infusum, Doveri Pulv., Guarana, Gummi Rubrum, Hæmatoxylum, Hydrarg. Perchlor., Ipecacuanha, Lini Decoct., Naphthalene, Phenol Iodatum,

Plumb. Acet., Ricini Oleum, Simaruba, Sodæ Chlorin. Liq., Sumbul.
Dysentery, Chronic. Argenti Nitras (enema), Cetraria, Cusparia, Hæmatoxylum, Plumbi Acet., Plumbi Pil. c. Opio, Rheum, Simaruba, Uva Ursi.
Dyspnœa. Æther, Æthyl Iodidum, Amyl Nitris, Lobelia, Pyridin.
Dysmenorrhœa. Ammon. Acetat. Liquor, Amyl Nitris (inhalation) Antipyrin, Apiol, Bromides, Cannabis Indica, Cimicifuga, Ergota, Senega.
Dyspepsia. Acid. Hydrocy. Dil., Æther, Aloes, Ammoniæ Liquor, Bismuthi Carb., Bismuthi Subnitras, Buchu, Calcis Liq., Carbo Ligni, Caryophylli Ol., Cascarillæ Inf., Cerii Oxalas, Cetraria, Hæmatoxylum, Limon, Magnesia, Malt Extract, Menispermin, Papain, Pepsin, Peptonised Foods, Potassæ Liquor, Potass. Bicarb., Potass. Sulph., Quassia, Rheum, Salicinum, Sapo Durus, Senna, Serpentaria, Sodæ Liq., Sodii Bicarb., Sodii Carb., Sodæ Chlorin. Liq., Zingiber. *Mineral Waters:* Alet, Apollinaris, Charlottenbrunnen, Dinsdale, Ems, Gilsland, Homburg, Orezza, Vals. See also *Carminatives* and *Tonics, Stomachic.*—Section A.
—— *Atonic:* Acid. Sulph. Dil., Anthem. Inf., Armoracia, Calumba, Camphora, Capsicum, Castoreum, Catechu, Ferrum Salts, Chiretta, Gentiana, Hæmatoxylum, Hydrastis, Nux Vomica, Pepsin, Piper Nig., Potassii Ferrocyanidum.
—— *Irritative:* Bismuthi Subnitras, Cerii Oxalas.
Ear, Diseases of. Iodoform, Iodol.

Ecbolics.—Section A.
Eczema. Acid. Carbolic., Acid. Salicylic., Aluminii Oleatum, Argenti Nitras, Bismuthi Lotio, Creasoti Ung., Cremor Lithargyri, Glycerinum, Hyd. Ammon. Ung., Hydrarg. Subchlor. Ung., Ichthyol, Sodii Arsenias, Sozoiodol, Zinci Oxidum, Ung. Glycerin. Plumbi Subacetatis. *Mineral Water:* Aix-les-Bains.
—— *Chronic:* Acid. Arseniosum, Ol. Betulæ Ung., Cadini Oleum, Hydrarg. Nitrat. Ung., Hyd. Oxid. Flav. Ung., Naphthol, Paraffinum Liquid., Resorcin, Zinci Oxidum.
Emetics.—Section A.
Emmenagogues.—Section A.
Emollients.—Section A.
Epilepsy. Acid. Arseniosum, Ammon. Bromid., Amyl Nitris, Argenti Nitras, Belladonna, Camphora Monobrom., Castoreum, Cerii Oxalas, Cupri Sulphas, Ferri Perchlor. Tinct., Moschus, Niccoli Bromidum, Nitroglycerine, Picrotoxinum, Potassii Bromidum, Sodii Nitris Purus, Strychnina, Valeriana, Zinci Bromidum, Z. Sulph., Z. Valerianas.
Epistaxis. Acid. Tannic, Alum, Ergota, Galla, Gummi Rubrum Extract. Liquid., Ferri Chloroxydi Liquor, Hamamelis.
Erysipelas. Locally: Acid. Carbolic (spray), Acid. Sulphurosum (spray), Amyli Glycer., Amylum, Argenti Nitras, Belladonnæ Glycerinum, Collodium, Creasotum, Creta, Ichthyol, Lycopodium, Salol. *Internally:* Aconitum, Belladonna, Cinchona, Ferri Perchlor. Tinct., Quinina.
Escharotics.—Section A.
Evacuations, Fœtid. Potas. Permangan., Sodæ Chlorinatis Liquor.
Excoriations. Alum, Amylum, Boracis Glycerinum, Fuller's Earth, Glycerini Ung., Plumbi Carb., Zinci Oxid.
Expectorants.—Section A.
Expectoration, Fœtid: Acid. Carbolic., Potass. Permanganas, Chlori Liq.
—— *to diminish:* Aconitum, Belladonna, Larix, Opium, Quinina.
Eyes, application for the. Alum, Aurantii Floris Aqua, Acidi Borici Lotio, Acid. Hydrocyanici Vapor, Chloroformi Vapor, Cocainæ Lamellæ, Cydonii Decoct., Lotio Gummi Rub., Hyd. Iod. Rub. Ung. (dil.), Hyd. Nitrat. Ung. Dil., Lapis Divinus, Opii Vinum. Ricini Ol.
—— *to contract pupil of:* Physostigmina, Pilocarpina; Gelsemium (*internally*).
—— *to enlarge pupil of:* Atropina, Belladonna, Daturina, Homatropina, Hyoscyamina, Hyoscina, Scopola, Gelsemium (*locally*).

Fæces, Impacted. Lini Enema, Ricini Olei Enema.
Fainting. See *Syncope.*
Fascia, Contracted and Indurated. Ung. Hydrarg. Iod. Virid. cum Atropina.
Febrifuges.—Section A.
Feet, perspiring. Pulvis Salicylic. cum Talco, Salicylic Suet, Zinci Oxid. Ung.
Fever.—See *Antipyretics.* Section A.
—— *hay:* See *Hay Fever.*
—— *intermittent:* Arsenicalis Liquor, Beberinæ Sulph., Berberis, Capsici

Tinct., Cascarilla, Cinchona, Cinchonidina, Cinchonina, Cuspariæ Cort., Ipecacuanha, Kino, Quassia, Quinina, Salicin, Santoninum, Sodii Chloridum.

—— *puerperal:* Chloral Hydras, Potassii Bromidum, Opium.

—— *remittent:* Cinchona, Beberinæ Sulphas, Quininæ Sulphas.

—— *scarlet:* Acid. Carbolicum, Acid. Sulphurosum, Aconitum, Ammon. Benz., Ammon. Carb., Belladonna, Juniperi Oleum. *Locally:* Acid. Acetici (vapor), Acid. Carbol. (spray), Acid. Sulphurosum (spray), Chlori Liquor, Resorcin, Sodæ Chlorinatæ Liquor.

—— *typhoid:* Acid. Carbolic. (Mistura), Acid. Nitr. Dil., Ammon. Liq., Amyli Enema, Antifebrin, Argent. Nitr., Belladonna, Chlori Liq., Cusparia, Magnesii Salicylas, Naphthalene, Naphthol, Serpentaria, Sumbul Tinct., Thallinæ Sulphas.

Flatulence. Acid. Carbolicum, Acid. Sulphurosum, Æther, Aloes, Anethum, Anisum, Armoraciæ Spirit. Co., Asafœtida, Bismuth, Cajuputi Ol., Capsicum, Carbo Ligni, Caryophyllum, Fœniculi Ol., Lavand. Oleum, Menthæ Pip. Ol., Menthæ Virid. Ol., Piper Nigrum, Rutæ Enema, Terebinthinæ Enema, Zingiber.

Flooding. See *Hæmorrhage, Uterine.*

Gall Stones. Æther, Belladonna, Chloral Hydras, Chloroformum, Morphina, Olivæ Oleum, Ricini Oleum, Sapo Durus, Sodii Carb., Sodii Phosphas, Terebinthinæ Oleum. *Mineral Water:* Carlsbad.

Gangrene. Tonics and Stimulants. *Locally:* Antiseptics.

Gastralgia. Acid. Arseniosum, Acid. Hydrocyan. Dil., Æther, Argenti Nitras, Belladonna, Bismuth Salts, Carbo Ligni, Cerii Oxalas, Cocaina, Manganesii Oxid. Nig., Opium, Pepsin.
Mineral Water: Contrexville.

Generative Organs, loss of tone.—See *Aphrodisiacs.*

—— *Sedative of.*—See *Antaphrodisiacs.*

Glands, enlarged and indurated. Acid. Arseniosum, Ammon. Chlorid., Ammoniaci c. Hydrarg. Emp., Croton. Oleum, Cadmii Iodid., Calcii Chlorid., Calx Sulphurata, Carbon. Bisulphidum, Fucus Vesiculosus, Morrhuæ Oleum, Iodi Linim., Iodi Tinct. (inject.), Potass. Iodid., Lin. Potass. Iodid. c. Sapone, Sodæ Chlorinatæ Liquor. *Mineral Waters:* Kœnigsdorff, Leuk, Marienbad.

Gleet. Internally: Bals. Peruvianum, Copaiba, Creasotum, Cubebs, Ferri Perchlor. Liquor, Santali Oleum. *Locally:* Acid Tannic, Cupri Sulphas, Plumbi Acetas, Zinci Sulphas.

Goître.—See *Bronchocele.*

Gonorrhœa, Acute. Internally: Aconitum, Antim. Tart., Hordei Decoct., Lini. Inf., Potass. Bicarb., Santal. Flav. Ol. *Locally:* Betol, Bismuth. Subnit., Iodoform and Eucalyptus Bougies, Zinci Acetas, Z. Chlorid., Z. Permang., Z. Sulphocarbolas.

—— *Chronic. Internally:* Copaiba, Cubeba, Santali Oleum. *Locally:* Argenti Nitras (bougie), Plumbi Acetas cum Opio, Zinci Acetas, Z. Chloridum cum Belladonna, Z. Sulphas.

Gout. Acid. Benzoicum, Ammonii Benzoas, Ammonii Phosphas, Caffeinæ Tri-iodidum, Cajuputi Ol., Colchicum, Crotonis Oleum, Gynocardiæ Oleum, Hyoscyamus, Lithii Benzoas, L. Bromidum, L. Carbonas, L. Citras, L. Guaiacas, Magnesia, Potass. Acetas, P. Citras, Sabina, Serpentaria, Sodii Benzoas, S. Carbonas, S. Phosphas, S. Taurocholas. *Mineral Waters:* Adelheidsquelle, Aix-les-Bains, Baden-Baden, Buxton, Carlsbad, Eilsen, Ems, Franzensbad, Ischia, Marienbad, Nenndorf, Neuenahr, Ofen, Plombières, Soden, Strathpeffer, Tarasp, Toeplitz, Vichy, Weilbach, Wiesbaden, Wildbad.

—— *painful:* Aconitinæ Unguent., Antipyrin, Cajuputi Oleum, Colchici Extr. c. Pulv. Doveri, Hyoscyamus, Menthol, Potass. Iodidum, Veratrinæ Unguentum.

Gums, inflamed. Krameriæ Tinct.

—— *spongy:* Gummi Rubri Tinct., Myrrhæ Tinct., Potass. Chloras, Quercus Decoct., Tinct. Myrrhæ et Boracis.

Hair falling off.—See *Baldness.*

Hay Fever. Antipyrin, Belladonna, Camphoræ Spirit., Cannab. Ind., Cocaina, Grindelia Robusta, Lobelia Inflata, Quininæ Sulphas Acida, Stramonium.

Hæmatemesis.—Acid. Gallicum, Acid. Tannicum, Ergota, Hamamelis, Plumbi Acetas, Terebinthinæ Oleum.

Hæmaturia. Acid. Sulph Dil., Acid. Tannic., Acid. Gallic., Alumen, Ergota, Ferri Perchloridi Liquor, Hamamelis, Plumbi Acet., Terebinthinæ Oleum.

Hæmatinics.—Section A.

Hæmoptysis. Acid. Gallicum, Agaricus, Antipyrin, Atropina, Digitalis, Ergota, Ferri Acetatis Liquor, Hamamelis, Plumbi c. Opio Pilula.

Hæmorrhage. See *Styptics.*

—— *Uterine and post-partum:* Acetum, Acid. Gallic., Acid. Tannic., Cannabis Indica, Ergota, Hamamelis, Hydrastis, Limonis Succus, Matico.

Hæmorrhoids. Acid. Nitricum (lotio), Aloes Socot., Galbani Ung. Co., Gallæ Ung. and Ung. cum Opio, Hamamelis, Picis Pilulæ et Capsulæ, Piper Nigrum, Sulphur. *Mineral Waters:* Luhatschowitz, Mergentheim.

Hæmostatics.—Section A.

Headache, nervous. Internally: Acid. Hydrobrom. Dil., Ammon. Bromid., Ammon. Aromat. Spirit., Amyl Nitris (vapor), Antipyrin, Antifebrin, Cannabis Ind., Cimicifuga, Caffeina, Guarana, Magnesia, Nitroglycerine, Potass. Bromid., Potass. Ferrocyanid., Sodii Bicarb., Tinct. Succini. *Locally:* Aconitum, Æther, Belladonna, Camphora, Cocaina, Menthol.

Heart, Valvular Disease of. Adonis Vernalis, Apocynum, Caffeina, Convallaria, Digitalis, Erythrophlæum, Sparteina, Strophanthus.

Heartburn. See *Pyrosis.*

Hectic Sweating. See *Sweating.*

Hepatics. See *Cholagogues.* Section A.

Hepatitis. Ammon. Chlorid., Hyd. Subchlorid.

Hernia, strangulated. Chloroformum.

Herpes. Acid. Acetic., Argenti Nitras, Ferri Arsenias, Glycerinum, Hydrargyrum Ammoniatum, Iodum, Morphinæ Oleas, Ulmi Decoctum, Zinc Salts.

Hooping Cough. See *Whooping Cough.*

Hiccough. Anethum, Apomorphia, Belladonna, Chloroformum, Ergota, Physostigma, Pilocarpina, Sinapis Infusum.

Hydrocele. Glycerinum Acidi Carbolici, Glycerinum and Tinctura Iodi.

Hydrocephalus. Crotonis Oleum, Hydrarg. Subchloridum, Potass. Bromidum, Potass. Iodidum.

Hydrophobia. Aconitum, Cannabis Indica, Cantharis, Chloral Hydras, Chloroformum, Curaro, Simaba Cedron.

Hypnotics.—Section A.

Hypochondria. Chloral Hydras, Lavandulæ Oleum, Potassii Bromidum. *Mineral Water:* Homburg.

Hysteria. Ammonii. Carb., Ammonii Bromid., Asafœtida, Cajuputi Ol., Camphora Monobromata, Castoreum, Tinct. Chloroformi et Morphinæ, Lavand. Ol., Moschus, Nux Vomica, Phosphorus, Potass. Bromid., Rosmarini Ol., Rutæ Ol., Terebinthinæ Ol., Valeriana, Zinci Phosphidum, Z. Valerianas. *Mineral Waters:* Homburg, Lippik, Spa.

Impetigo. Hydrargyrum Ammon., Zinci Unguentum.

Incontinence of Urine. See *Urine.*

Indigestion. See *Dyspepsia.*

Inflammation. Acute: Aconite, Antim. Tart., Belladonna, Hydrarg. Subchloridum.

—— *Chronic:* Iodine, and Iodides.

Influenza. Acid. Sulphurosum (vapor). Ammon. Acetat. Liq., Antim. Tart., Benzoini Vapor, Sp. Æther. Nitr., Tinct. Quininæ Ammoniata.

Insects, to keep away. Camphora, Colocynth. Pulpa, Lavand. Oleum, Pyrethri Flores, Quassia, Rosmarini Oleum, Terebinth. Oleum.

Insomnia.—See *Hypnotics,* Section A.

Intermittents.—See *Fever.*

Iritis. Atropina, Belladonna, Hydrarg. Subchlor., Hyoscyamus, Potass. Iodidum, Quinina.

Irritants.—Section A.

Issues, to keep open. Mezerei Ung., Sabinæ Unguentum.

—— *to heal.* Acidi Borici Unguent, Cetacei Unguentum.

Itch.—See *Scabies.*

Itching.—See *Skin.*

Jaundice. Creasotum, Fel Bovinum, Hydrarg. Subchlorid., Pilocarpina, Potassa Sulphurata, Potassii Sulphas, Sapo Durus, Taraxacum.

Joints, Diseased
——— *Enlarged*
——— *Indurated*
{ Iodum, Hydrarg. Oleas., also with Morphia, Ung. Hydrarg. Comp., Potass. Iodid., Sodii Salicylas, Veratrinæ Ung.

Kidneys, Diseases of,—See *Albuminuria, Bright's Disease, Dropsy (Renal), and Uræmia.*

Kidneys, hæmorrhage from. Acid. Gallic., Iron Alum.

Laryngeal Spasm. Amyl Nitris.

Laryngismus Stridulus. Ammonia, Antipyrin, Chloral Hydras, Chloroformum, Potassii Bromidum.

Laryngitis. Ammon. Chloridum, Benzoini (vapor), Codeina, Creasoti (vapor), Menthol (spray), Pini Sylvestris Oleum. *Locally:* Acid. Sulphurosum (spray), Acid. Tannicum Glycerin., Argenti Nitras, Ferri Perchlor. Liquor.

Laxatives.—Section A.

Leech bites, to stop. Alum, Argenti Nitras, Ferri Perchlor., Ferri Chloroxidi Liquor, Matico.

Leeches, to dislodge if swallowed. Sodii Chloridum.

Lepra.—See *Psoriasis.*

Leprosy. Balsam. Dipterocarpi, Gynocardiæ Oleum.

Leucorrhœa. Acid. Boric., Acid. Gallic., Acid. Tannicum, Alumen, Catechu, Ferri Pernit. Liquor, Granati Cort., Gummi Rubrum, Hæmatoxyli Decoct., Krameria, Potass. Iodidum, Quercus Cort., Santal. Flav. Oleum, Sodii Sulphocarbolas, Styrax Præparatus, Zinci Sulph., Zinci Sulphocarbolas. *Mineral Waters:* Kreuznach, Wildungen.

Lice.—See *Pediculi.*

Lichen. Acid. Sulphurosum, Argenti Nitras, Glycerinum, Hydrarg. Oxid. Flav. Ung., Ichthyol.

Lips, cracked. Unguent. Bals. Peru.

Liver, Obstruction of. Acid. Nitro-Hydrochlor. Dil., Alkaline Carbonates and Bicarbonates, Ammon. Chlorid., Euonymin, Chlori Liquor, Hydrarg. Subchlorid., Hydrarg. Pilula, Magnes. Sulphas, Sodii Sulphas, Soda Tartarata, Podophyllin. See also *Cholagogues.* Section A. *Mineral Waters:* Aix-la-Chapelle, Carlsbad, Ems, Friedrichshall, Kissingen, Leamington. Pullna. See also *Colic (Biliary),* and *Gall Stones.*

—— *Chronic enlargement of.* Acid. Nitro-hydrochloric. Dil. (*Internally and externally*). Potassii Iodidum.

Locomotor Ataxy. Argenti Nitras, Physostigma; Bodily Suspension.

Lumbago. Belladonna, Lin. Bellad. Comp., Cimicifuga, Lin. Opii Ammoniatum, Picis Burgundicæ Empl., Quininæ Sulphas.

Lupus. Acid. Arseniosum, Acid. Lacticum, Salicylic and Creasote Plaster Mull, Hydrarg. Iodid. Rub. Ung., Hydrarg. Nitrat. Ung., Iodi Causticum, Potassa cum Calce, Sodii Ethylatis Liquor.

Malarial Fever. Ammonii Picras, Warburg's Tincture, Quininæ Sulphas. See also *Fever, Intermittent.*

Mania, Acute. Cannabis Indica, Chloral Hydras, Cimicifuga, Gelsemium, Hyoscina, Hyoscyamina, Methylal, Opium, Paraldehyde, Potassii Bromidum.

Measles. Aconitum, Ammon. Carb., Ammon. Acet. Liquor, Dover's Powder, Ipecacuanha, Potass. Citras, Quininæ Sulphas.

Melæna. Ergotin (hypodermic), Ferri Perchlor. (inject), Hamamelis, Plumbi Acet. cum Opio (inject), Terebinth. Oleum.

Melancholia. Camphora, Morphina, Paraldehyde, Potassii Bromidum. See also *Cathartics.*

Meningitis, Acute. Antim. Tart., Hydr. Subchloridum, Digitalis, Ergota, Potass. Bromidum, Potass. Iodidum, Purgatives; Ice externally.

Menorrhagia. Acid. Gallic., Beberinæ Sulphas, Bryonia, Cannabis Ind., Ergota, Hamamelis, Krameria, Plumbi Acet., Vincæ Major. Ext. Fluid.

Menstruation, Defective. See *Amenorrhœa.*

—— *Painful.* See *Dysmenorrhœa.*

Metritis. Locally: Argenti Nitras, Carbolic Acid and Glycerine, Tinct. Iodi.

—— *Granular.* Abri Infusum.

Midges, to keep away. Tereb. Ol.

Milk Secretion, to increase. Alcohol, Jaborandi, Ricini Fol. Decoctum.

—— —— *to diminish.* Belladonna.

Miscarriage, to prevent. Acid. Gallicum, Acid. Sulph. Dil., Ergota (small doses), Pilula Plumbi cum Opio., Viburnum.

Mollities Ossium. Calcii Phosphas.

Mumps. Hydrarg. cum Creta, Pilocarpina.

Nævi. Alum, Liq. Ferri Perchlor. Fort., Liq. Sodii Ethylatis, Zinci Chloridum, Zinci Nitras.

Nails, Split. Ung. Stanni Oleatis.

Narcotics.—Section A.

Nausea. See *Vomiting.*

Neuralgia. Acid. Arsenios., Acid. Osmicum, Aconiti Chloroform., Aconiti Linim., Aconitiæ Ung., Actæa Racemosa, Ammon. Bromidum, Ammon. Chlorid., Amyl Nitris, Antifebrin, Antipyrin, Beberinæ Sulphas, Atropinæ Solut. (hypodermically), Belladonnæ Lin., Brucine, Butyl-Chloral Hydras, Camphoræ Lin., Camphor.

Lin. Co., Cannabis Indica, Chloral cum Camphora, Chloroformum, Cimicifuga, Cinchona, Cocaina, Conium, Crotonis Liniment., Delphinina, Exalgine, Ferrum, Ferri Oxid. Magnet., Gelsemii Tinctura, Gelsemin, Hyoscyamus, Iodoform, Menth. Pip. Oleum, Menthol, Morphina, Papaveris Decoctum, Phenacetin, Piscidia, Quininæ Sulph., Quininæ Dikinat. Syr., Sinapis Cataplasma, Veratrinæ Ung., Zinci Valerianas.

Nipples, Sore. Acid Tannic. Glycerinum, Argenti Nitras, Bals. Peru. Ung., Boracis Ung., Catechu, Sodæ Chlorinatæ Liq.

Nitrate of Silver Stains, to remove. Potass. Cyanid., Potass. Iodid.

Nocturnal Emissions. Belladonna, Ferri Bromid., Potass. Bromid.

Nymphomania. Camphora, Potassii Bromidum.

Nutritive.—Section A.

Obesity. Alkalies, Ferri Iodid. Fucus Vesiculosus, Potass. Iodid. *Mineral Waters :* Carlsbad, Ems, Kissingen, Marienbad, Tarasp.

Ophthalmia. Argent. Nit., Mitigated Caustic.

Orchitis, Acute. Locally : Glycerinum Belladonnæ. *Internally :* Saline Aperients, Antimonium Tartarat., Hyoscyamus.

Otorrhœa. Acid. Tannic. Glycerinum, Iodoform, Iodol, Potass. Permang., Zinci Chlorid., *all locally.*

Ozæna. Acid. Carbolic., Acid. Tannic., Borax, Boro-glyceride, Potass. Permanganas, Sodii Ethylatis Liquor, Zinci Chlorid., *all locally.*

Palpitation. Aconitum, Æther, Ammonia, Bromides, Camphora.

Paralysis. Belladonna, Cannabis Ind., Ergota, Hyoscyamus, Nux Vomica, Physostigma, Strychnina. *Mineral Waters :* Aix-la-Chapelle, Baden-Baden, Eilsen, Ischia, Kreuznach, Toeplitz.

—— *of Lead Poisoning.* Alkaline Sulphates, Potassii Iodidum.

Pediculi. Hyd. Ammon. Ung., Hydrarg. Oleas, Naphthol, Staphisagriæ Olei Ung.

Periostitis. Potassii Iodidum.

Peritonitis, Acute. Hydrarg. Subchlor., Opium.

Perspiration, to diminish. See *Anthidrotics.* Section A.

—— *Fœtid.* Acid. Carbolic. Glycer., Belladonna, Plumbi Oxid. Ung., Zinci Oxid. Ung.

Phthiriasis. See *Pediculi.*

Phthisis. Acid. Benzoic. (inhal.), Acid. Carbolicum, Acid. Gallicum, Acetophenone (inhal.), Acid. Hydrofluoric. (inhal.), Aconiti Tinct., Agaricin, Antifebrin, Atropina, Calcii Hypophosphis, Camph. Tinct. Co., Carbonei Bisulphidum, Cerii Oxalas, Conium, Creasotum, Butyl-Chloral Hydrat., Eucalypti Ol. (inhal.), Guaiacol, Iodi Vapor, Iodoform, Malti Extractum, Morrhuæ Oleum, Opium, Picrotoxinum, Plumbi Acetas, Quinina, Saccharum Lactis, Salol.

Piles.—See *Hæmorrhoids.*

Pityriasis Versicolor. Glycerinum Boracis, Hydrarg. Oxid. Flav. Ung., Naphthol, Zinci Ung.

Pleural Effusion. Apocynum, Digitalis, Iodum, Pilocarpina.

Pleuritis. Aconitum, Antim. Tart., Crotonis Linim., Hydrarg. Subchlor., Potass. Iod., Sinapis Cataplasma.

Pneumonia. Aconitum, Ammon. Acetat. Liquor, Antim. Tart., Æther. Nitrosi Sp., Quinina, Sinapis Cataplasma.

Polypi, Nasal. Locally : Acid. Tannic., Sodii Ethylatis Liquor, Zinci Chloridum.

Post-partum Hæmorrhage. See *Hæmorrhage, Uterine.*

Prolapsus Ani. Acid. Tannic., Alum., Cupri Sulph., Ergotin, Ferri Perchlor., Gummi Rubr. Extr. Liq., Krameria, Nux Vomica, Sulphur.

Prostration. Æther, Ammonia, Caffeina, Coca, Moschus, Spiriti Vini Gallici Mistura.

Prurigo. Internally : Acid. Arsenios., Ammonii Bromid., Hyoscyamus, Quinina, Strychnina. *Locally :* Borax, Ichthyol, Iodoformum, Papaveris Decoctum, Liquor Carbonis Detergens, Potass. Cyanid., Sulphuris Ung.

Pruritus Ani. Hydrarg. Subchlor. Ung., Menthol.

—— *Pudendi.* Glycerinum Boracis, Cocaina, Ichthyol.

Psoriasis. Internally : Acid. Arsenios. *Locally :* Acid. Carbolic., Acid. Pyrogallic., A. Salicylic., Betula Alba, Chrysarobin, Creasotum, Saponis Emp., Glycerinum, Hydrarg. Subchlor. Unguent., Ol. Cadinum, Liquor Carbonis Detergens, Naphthol, Picis Unguent., Potassa Sulphurata, Resorcin, Sodii Carbonas.

Puerperal Convulsions. Chloral, Chloroformum (inhal.), Morphina, Potassii Bromidum.

Purgatives.—Section A.

Purpura. Ferri Perchlor. Tinct., Quinina, Ergota, Terebinthinæ Ol.

Putrescence, to Correct. See *Antiseptics*, Section A.

Pyæmia. Alcohol, Ammonia, Quinina. Antiseptics.

Pyrosis. Acid. Gallic., Acid. Sulphuros., Argent. Oxid., Bismuthi Subnitras, Bismuth. Carb., Catechu, Cerii Oxalas, Kino, Manganesii Oxid. Nigrum, Opium, Pulvis Doveri.

Quinsy. See *Tonsils, inflamed.*

Refrigerants.—Section A.

Restoratives.—Section A.

Retention of Urine.—See *Urine.*

Rheumatism, Acute : Acid. Salicylic., Acid. Benzoic.,Aconitum, Antifebrin, Antipyrin, Betol, Cimicifuga, Gaultheriæ Ol., Opium, Pot. Acetas, Pot. Bicarb., Pulv. Doveri, Quinina, Salicinum, Salol, Sodii Salicylas.

—— *Chronic :* Acid. Salicyl., Ammon. Chlorid., Ammon. Phosph., Antim. Sulphurat., Antipyrin, Armoracia, Betol, Buchu, Capsici Tinct. Fort., Chloral, Chloroformum Camphoratum (local), Conium, Cajuputi Ol., Dulcamara, Gynocardiæ Ol., Guaiacum, Hydrarg. et Morphinæ Oleas, Iodi Lin., Camph. Lin. Co., Iodoform, Lithii Guaiacas, Menthol, Morrhuæ Oleum, Picis Burgundicæ Emplast., Pini Pumilionis Oleum, Pini Sylves. Ol., Potassæ Liquor, Lin. Pot. Iod. c. Sapone, Syr. Quininæ Hydriod., Sabina, Salol, Serpentaria, Sodii Hyposulphis, Sodii Iodid., Sodii Salicylas, Sulphur, Chelsea Pensioner, Terebinth. Oleum. *Mineral Waters:* Aix-les-Bains, Aix-la-Chapelle, Baréges, Baden-Baden, Bath, Berka, Buxton, Franzensbad, Hamman R'Irha, Lucca, Ofen, Toeplitz, Wiesbaden, Woodhall.

—— *painful.* Belladonnæ Chloroformum, Hydrarg. et Morphinæ Oleas, Hyoscyami Lin. Co., Lin. Camph. Co.

Rickets, Rachitis. Acid. Phosphor. Dil., Calcis Liquor, Calcii Phosphas, Creta Præparata, Ferri Phosphas, Morrhuæ Oleum, Chemical Food.

Ringworm. Acid. Acetic., Acid. Salicylic., Cupri Oleatis Ung., Glycerinum Acid. Carbol., Hydrarg. Oxyd. Flav. Ung., Hyd. Sulphatis Flav. Ung., Pigmentum Picis c. Iodo, Ung. Picis, Resorcin, Ung. Sulphuris Comp.

Rubefacients.—Section A.

Salivation, to produce. See Sialagogues, Section A.

—— *to diminish.* Atropina, Belladonna.

Sarcina Ventriculi. Acid. Sulphuros., Potassii Sulphis, Sodii Sulphis, Sodii Hyposulphis.

Scabies. Acid. Sulphuros, Adeps Præparatus, Calcis Chlorinat. Liq., Hydrarg. Ammoniatum, Naphthalene, Naphthol, Potassa Sulphurata, Staphisagriæ Olei Ung., Sulphuris Hypochlor. Ung., Sulphocarbolates, Sulph. Ung. Co., Sulphuris. Ung.

Scalds. See *Burns and Scalds.*

Scarlet Fever. See *Fever, Scarlet.*

Sciatica. Acid. Osmic., Aconiti Lin., Antipyrin, Iodoformum, Bellad. Lin. Comp., Opium, Sodii Salicylas. See also *Rheumatism.*

Scorbutic Affections. See *Scurvy*

Scrofula. Calcii Chloridum, Calcii Phosphas, Calx Sulphurata, Creta Præparata, Ferri Iodid., Ferri Phosphatis Syrup. Co. (Chemical Food), Galium Aparine, Hyd. Iod. Virid. Ung., Hyd. Subchlor., Iodum, Morrhuæ Oleum, Potass. Iod., Potassæ Liquor, Pot. Bicarb., Quinin. Sulph., Sodii Hyposulphis, Sodii Iodidum, *Mineral Waters :* Adelheidsquelle, Arnstadt, Baréges, Cauterets, Ems, Ischia, Kœnigsdorff, Kosen, Krankenheil, Kreuznach, Luhatschowitz, Neuenahr, Reichenhall, St. Moritz, Shap, Soden, Strathpeffer, Vals, Woodhall.

Scurvy. Acid. Citricum, Potass. Citras , Limonis Succus.

Scybala. Enemata Olei Lini and Olei Ricini.

Sea Sickness. Amyl Nitris, Caffeinæ Citras, Camphora, Capsici Tinct., Cerii Oxalas, Chloral, Chloroformum, Creasotum, Cocainæ Hydrochloras, Nitroglycerine, Sodii Bromidum.

Seborrhaæ Capitis. Ung. Hydrarg. Sulphat. Flav.

Sedatives.—Section A.

Sialogogues.—Section A.

Sickness, to arrest.—See *Vomiting.*

Skin, Abraded. Collodium.—See *Excoriation.*

Skin Cracks in. Amyli Glycerinum, Cydonii Decoct.
—— *Itching of.* Acid. Hydrocyan. Dil., Amygd. Amaræ Mist., Acid. Citric., Acid. Tartaric., Calx Chlorinata.
—— *Tender.* Chloroformi Linimentum.
Sleeplessness.—See *Hypnotics*, Section A.
Small Pox. Acid. Carbolic. Glycerinum, Acid. Salicylic., Antifebrin, Argenti Nitras (*local*), Chlori Liq., Potassii Chloras, Quinina.
Snake Bites.—See *Bites.*
Soporifics.—Section A.
Sneezing, paroxysmal. Acid. Arsenios., Iodum, Potassii Iodidum.
Sores.—See *Ulcers.*
Sores, Bed.—See *Bed sores.*
Sore Nipples.—See *Nipples, Sore.*
—— *Throat.* Acid. Sulphuros. (Spray), Acid. Tannic. (Spray), Cubeba, Gummi Rubrum, Mori Syrup., Myrrha, Potass. Nitras, Potass. Chloras, Rosæ Infusum.
—— —— *Malignant.* Argenti Nitras, Capsicum, Chlori Liquor.
—— —— *Putrid.* Acid. Carbolic., Potass. Permang., Chlori Liquor.
—— —— *Relaxed.* Alum, Capsicum, Gummi Rubrum, Krameria, Glycer. Ferri Perchlor.
—— —— *Ulcerated.* Acid. Hydrochlor. Dil., Argenti Nitras, Boracis Glycerinum, Hydrarg. Perchlorid.
Spasmodic Affections.—See *Antispasmodics*, Section A.
Spermatorrhœa. Belladonna, Camphora Monobromata, Digitalis, Potassii Bromidum, Strychnina.
Spina Bifida. Iodo-Glycerine Solution (Morton's) injected.
Spleen, Enlargement of. Potassii Bromidum, Potassii Iodidum, Purgatives.
Locally: Ung. Hydrargyri, Iodidi Rubri.
Sprains. Lin. Saponis, Sp. Vini Rectif. (lotion), Cold Douche.
Stimulants.—Section A.
Stings.—See *Bites and Stings.*
Stomach Ache.—See *Gastralgia.*
Stomach, Irritability of.—See *Carminatives and Sedatives, Stomachic.*
—— *Ulceration of.* Argenti Oxid., Argenti Nitras, Bismuth. Carb., Opium, Peptonised Foods.
Stomatitis, Ulcerative. Alum, Borax, Tinct. Myrrhæ et Boracis.
Stomachics.—Section A.
Strangury. Camphor.
Styptics.—Section A.
Sudorifics.—Section A.
Sunstroke. Antipyrin, Cold Douche.
Sweating, Hectic. Acetum, Acid. Acetic. Dil., Acid. Gallic., Acid. Sulph. Dil. See also *Anthidrotics*, Section A.
Syncope. Ammon. Spir. Arom., Æther, Spiritus Vini Gallici.
Synovitis, Chronic. Emp. Ammon. c. Hydrarg., Hydrarg. Oleas, Ung. Iodi or Tinct. Iodi. (inject.), Blisters.
Syphilis, Primary and early secondary: Hydrargyrum, Compounds of.
—— *Late Secondary and Tertiary:* Iodum and the Iodides. *Mineral Waters:* Aix-la-Chapelle, Kreuznach, Vals, Woodhall.
Syphilitic Nodes. Emplastrum Hydrargyri, Potassii Iodidum, Sodii Iodidum.
—— *Warts.* See *Warts, Syphilitic.*
—— *Ulcers:* Iodoformum, Iodi Causticum, Ung. Amyli Iodidi, Lotio Hydrarg. Flava or Nigra.

Tabes Mesenterica. Morrhuæ Oleum, Ferrum preparations of, Quinina.
Tape Worm.—See *Anthelmintics*, Section A.
Teeth, Caries of. Arsenical Paste, Cocaina, Chloral cum Camphora et Cocaina, Creasotum, Mastic Dentaire.
Tetanus. Aconitum, Amyl Nitris, Atropina, Cannabis Indica, Chloral Hydras, Curare, Physostigma.
Tetter. Picis Unguentum.
Thirst, to allay. Acid. Citricum, Acid. Phosphoricum, Acid. Tartaricum.
Throat, Sore. See *Sore Throat.*
Thrush. See *Aphthæ.*
Tic Douloureux. See *Neuralgia.*
Tinea Capitis. See *Ringworm.*
Tonics.—Section A.
Tonsils, Enlarged. Internally. Potassii Iodidum, Ammonii Bromidum, Potassii Bromidum. *Locally:* Iodum cum Glycerino or Tinct. Iodi.
—— *Inflamed. Internally:* Aconitum, Antim. Tart., Belladonna, Guaiaci Trochisci, Hydrarg. c. Creta, Sodii Salicylas. *Locally:* Alum, Acid. Carbolic., Cocaina, Hydrargyri et Morphinæ Oleas, Potass. Chloratis Trochisci.
—— *After Excision of.* Trochisci Althææ.
Toothache. Acid. Sulphuros. (Spray), Caffeina, Cajuputi Oleum, Capsici Tinct. Fortior, Caryophylli Oleum, Chloral cum Camphora et Cocaina, Chloroform. c. Camphorâ, Creasotum, Gelsemii Tinctura, Phenol-

Camphor, Pyrethrum, Quininæ Ammoniata Tinctura.

Trichinosis. Glycerinum.

Tubercles, Syphilitic. Hydrarg. Nit. Acid. Liquor.

Tuberculosis. See *Phthisis and Scrofula.*

Typhoid Fever.—See *Fever, Typhoid.*

Typhus. Acid. Hydrochlor. Dil., Alcohol, Antim. Tart., Chloral, Limonis Succus, Ricini Oleum, Opium, Quinina.

Ulcers. Acid. Boracic., Argenti Nitras, Calcis Chlorinatæ Liq., Creta Præparat., Cupri Sulphas, Plumbi Acetas, Plumbi Carb., Resinæ Emp., Sabina, Zinci Sulphas, Zinci Ox. Ung.

—— *Cancerous.* Acid. Chromic., Antim. Chlor. Liquor., Potassa Caustic.

—— *Foul or Fœtid.* Acid. Carbolic., Acid. Chromic., Acid. Salicylic., Acid. Sulphuros., Bismuthi Subiod., Calcis Chlorinatæ Liquor, Carbo Animal. Purif., Carbo Ligni, Cataplasma Fermenti, Chlori Liq., Calx Chlorin., Eucalypti Ung., Iodoform., Potass. Permanganas, Resorcin, Sodæ Chlorinatæ Liquor, Zinc. Chloridum.

—— *Indolent.* Acid. Chromic., Alumen Exsic., Argent. Nit., Bals. Peruv., Benzoini Tinct. Co., Cupri Acetas, C. Subacetas, C. Sulphas, Elemi Ung., Hydrarg. Lin., Hydrarg. Oxid. Rubr. Ung., Ichthyol., Kino Pulv., Lotio Rubra, Resinæ Ung., Sabinæ Ung.

—— *Sloughing.* Iodoform.

Uræmia. Venesection, Digitalis, Elaterium, Pulv. Jalapæ Co., Pilocarpina (hypodermic), Potass. Bromid., Chloral Hydras, Chloroformum (inhalation).

Urine, Excess of Uric Acid in.—See *Antilithics*, Section A, also *Gout, Calculi, &c.*

—— *Phosphatic.* See *Antilithics.* Section A, also *Calculi.*

—— *Incontinence of.* Acid. Benzoic., Belladonna, Chloral, Creasotum, Ergota, Ferri Perchlor. Tinct., Quinina, Strychnina.

—— *Putrid.* Acid. Carbolic., Betol., Creasotum, Carbo Animal., Salol.

—— *Retention of.* Opium.

Urticaria. Liquor Calcis, Ung. Zinci.

Uterus, Hæmorrhage of. See *Hæmorrhage.*

—— *Inflammation of.* See *Metritis.*

—— *to contract.* See *Ecbolics.* Section A.

Uvula, Relaxed. Catechu Trochisci, Capsicum, Gummi Rubrum, Krameria, Pyrethrum, Rosæ Inf. Acid., Zingiber.

Varicose Veins. Tinct. Ferri Perchlor., Hamamelis.

Vermifuges.—Section A.

Vesical Catarrh. See *Cystitis.*

Vesicants.—Section A.

Vomiting, to allay.—See *Antemetics*, Section A.

—— *in Pregnancy.* Acid. Carbol., Cerii Oxalas, Calcis Saccharat. Liquor, Cocaina, Potass. Acetas.

—— *Chronic.* Calcis Liquor, Calcii Chloridum, Cerii Oxalas.

Warts. Acid. Acetic. Glaciale, Acid. Chromic., Acid. Nitric., Argenti Nitras, Cupri Oleatis Ung., Sodii Ethylatis Liquor.

—— *Syphilitic.* Argenti Nit., Hyd. Iod. Rub. Ung., Hyd. Nit. Acid. Liquor.

Wasp Sting. See *Bites and Stings.*

Wax, indurated. Glycerinum, Oleum Amygdalæ.

Whites.—See *Leucorrhœa.*

Whooping Cough. Acid. Carbolic., Acid. Cresylicum (inhal.), Alum, Ammon. Bromid., Antipyrin, Atropina, Belladonna, Cannabis Ind., Chloral, Tinct. Chloroformi et Morphinæ, Conium, Eucalypti Oleum, Euphorbia Pilulif., Grindelia, Hydrogen. Peroxid., Ipecacuanha, Lobelia, Potass. Bromid., Quinina, Resorcin, Succini Lin., Trifolii Syrupus, Zinci Sulphas.

Worms, Ascarides, Tape, and Round Worms.—See *Anthelmintics* Section A.

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,, *Belladonnæ*		94
,, *Conii*		161
,, *Hyoscyami*		239
,, *Ignatiæ*		242
,, *Jalapæ*		252
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,, ,, Lead		318
,, ,, Morphine		281
,, ,, Potassium		327
,, ,, Sodium		379
,, ,, Zinc		420
Acetato de Chumbo		319
,, *Plumbico*		319
,, *(sub.) Plumbico liquide*		322
Acetic Acid		4
,, ,, Diluted	1 to 2 drms	5
,, ,, Glacial		5
,, Ether		41
Aceto-Tartrate of Aluminium		49
Acetophenone		3
Acetum	1 to 2 drms.	3
,, *Aromaticum*		6
,, Cantharidis		123
,, *Ipecacuanhæ*		250
,, *Opii Crocatum*		300
,, Scillæ	15 to 40 minims	368
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Acibar		45
Acid, Acetic		4
,, ,, Glacial		5
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,, *Anisic*		67
,, Aromatic Sulphuric		30
,, Arsenious		6
,, *Azotic*		23
,, Benzoic		8
,, *Boracic*		9
,, Boric		9
,, *Carbazotic*		27
,, Carbolic		10
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,, Chromic		14
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,, *Cresylic*		16
,, *Cyanhydric*		20
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,, ,, *Lotio* 10
,, ,, *Pastillus* 10
,, ,, Unguentum 10
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,, ,, *Injectio*		12
,, ,, ,, *Hypodermica*		12
,, ,, *Lotio*		13
,, ,, *Mistura*		13
,, ,, *Spray*		12
,, ,, Suppositoria c. Sapone	1 gr. in each	13
,, ,, *Trochisci*		13
,, ,, Unguentum		13
,, ,, *Vapor*		12
,, Chromici Liquor		15
,, *Chrysophanici Unguentum*		145
,, *Citrici Syrupus.*		16
,, Gallici Glycerinum	10 to 60 minims	17
,, ,, *Unguentum*		17
,, *Hydriodici, Syrupus*		18
,, Hydrocyanici Vapor		21
,, *Pyrogallici Unguentum*		27
,, Salicylici Unguentum		28
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,, Tannici Glycerinum	10 to 40 minims	32
,, ,, *c. Opio Suppositorium*		33
,, ,, *Pessary*		33
,, ,, c. Sapone Suppositoria		32
,, ,, Suppositoria		32
,, ,, Trochisci	$\frac{1}{2}$ gr. in each.—1 to 6 loz.	33
,, ,, *Unguentum*		33
,, ,, ,, *c. Opio*		33
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,, ,, *Aquoso*		5
,, ,, *Glacial*		6
,, ,, *Hydratado*		5
,, *Agallico*		17
,, *Arsenioso*		7
Acidum Aceticum		4
,, ,, *Aromaticum*		6
,, ,, *Concentratum*		6
,, ,, *Crystallisatum*		6
,, ,, Dilutum	1 to 2 drms.	5
,, ,, Glaciale		5
,, *Arsenicosum*		7
,, Arseniosum	$\frac{1}{60}$ to $\frac{1}{12}$ gr.	6
,, Benzoicum	5 to 15 grs.	8
,, Boricum	5 to 30 grs.	9
,, Carbolicum	1 to 3 grs.	10
,, ,, *Crudum*		13
,, ,, Liquefactum		12
,, ,, *Solutum*		13
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Acidum *Chrysophanicum.*		15
,, Citricum	10 to 30 grs.	15
,, *Cresylicum*		16
,, *Embelicum*		180
,, *Fluoricum Dilutum.*		21
,, Gallicum	3 to 10 grs.—10 to 60 in albuminuria	17
,, Hydrobromicum Dilutum		18
,, Hydrochloricum		19
,, ,, Dilutum	10 to 30 minims	19
,, Hydrocyanicum Dilutum	2 to 8 minims	20
,, *Hydrofluoricum*		21
,, *Hypophosphorosum*		21
,, Lacticum		21
,, ,, Dilutum		22
,, Meconicum		22
,, *Metaphosphoricum*		27
,, *Muriaticum Purum*		19
,, Nitricum		23
,, ,, Dilutum	10 to 30 minims	23
,, Nitro-hydrochloricum Dilutum	5 to 20 minims	24
,, ,, ,, *Bath*		24
,, Oleicum		24
,, *Osmicum*		25
,, *Phenicum*		10
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,, ,, Dilutum	10 to 30 minims	26
,, ,, *Glaciale*		27
,, *Picricum*		27
,, *Pyrogallicum*		27
,, *Pyroligneosum Crudum*		27
,, ,, *Purificatum*		4
,, Salicylicum		28
,, *Scleroticum*		182
,, *Sulpho-carbolicum*		14
,, Sulphuricum		29
,, ,, *Alcoholisatum*		30
,, ,, Aromaticum	5 to 30 minims	30
,, ,, Dilutum	5 to 30 minims	30
,, Sulphurosum	½ to 1 drm.	31
,, Tannicum	2 to 10 grs.	31
,, Tartaricum	10 to 30 grs	33
,, *Thymicum*		410
,, *Trichloraceticum*		6
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,, Folia		34
,, Linimentum		35
,, ,, *Compositum*		36
,, Radix		34
,, *Succus*		34
,, Tinctura	5 to 15 minims	35
,, ,, *Dr. Fleming's*		36
,, *Trochisci*		36
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,, *Pomada de*		37
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,, *Myristicæ*		288
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,, *Vernalis*		39
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,, ,, *Alcoholicus*		40
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,, Spiritus	30 to 60 minims	40

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,, *Jordan*		61
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,, *Perryi*		45
,, *Purificata*		46
,, Socotrina	2 to 6 grs.	45
,, *Vulgaris*		44
Aloes Barbadensis Extractum	1 to 3 grs.	45
,, ,, Pilula	5 to 10 grs.	45
,, Decoctum Comp.	½ to 2 oz.	46
,, Enema		45, 46
,, Pilula et Asafœtidæ	5 to 10 grs.	47
,, ,, *Diluta*		45
,, ,, et Ferri	5 to 10 grs.	45
,, ,, et Myrrhæ	5 to 10 grs.	47
,, Socotrinæ Extractum	1½ to 3 grs.	46
,, ,, Pilula	5 to 10 grs.	47
,, Tinctura	1 to 2 drms.	47
,, Vinum	1 to 2 drms.	47
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,, ,, *Composita*		51
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,, Liquor	10 to 20 minims	53
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,, Spiritus Aromaticus	20 to 60 minims	57
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,, Benzoas	10 to 20 grs.	55
,, *Boras*		55
,, Bromidum	5 to 20 grs.	55
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,, Carbonas	3 to 10 grs.	56
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,, ,, ,, Fortior	30 to 90 minims	58
,, Chloridum	10 grs.	58
,, ,, *Draught*		58
,, ,, *Lotion*		58
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,, *Hydrochloras*		58
,, *Iodidum*	2 to 5 grs.	59
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,, ,, *Oleum*		61
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,, Oleum	1 to 4 minims	65
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,, Nigrum Purificatum		70
,, Sulphuratum	1 to 5 grs.	71
,, Tartaratum	Diaphoretic $\frac{1}{16}$ to $\frac{1}{6}$ gr. Depressant $\frac{1}{6}$ to 1 gr. Emetic . 1 to 2 grs.	71
Antimony		69
Antipyrin		73
Antiseptic Dressings, Boric		10
,, ,, *Carbolic*		13
,, ,, *Eucalyptus*		184
,, ,, *Iodoform*		246
,, ,, *Salicylic*		29
Apiol		74
Apis Mellifica		134, 276
Apium petroselinum		74
Apocyni Tinctura		74
Apocynum		74
,, *Cannabinum*		74
Apomorphinæ Hydrochloras		74
,, Injectio Hypodermica		75
Apomorphine		74
Apozème de Cousso		174
,, *Grenadier*		217
Appendix		430
Aqua		75
,, (*group*)		77
,, *Amygdalæ Amaræ*		60
,, Anethi	$\frac{1}{2}$ to 1 oz.	65
,, Anisi	$\frac{1}{2}$ to 1 oz.	66
,, *Anthemidis*		68
,, Aurantii Floris	$\frac{1}{2}$ to 1 oz.	88
,, *Calcariæ*		112
,, *Calcis. See* Liquor		112
,, ,, *Saccharata*		113
,, Camphoræ	1 to 2 oz.	119
,, *Carbolata*		13
,, *Carbolisata*		13
,, Carui	1 to 2 oz.	129
,, *Chlorata*		141
,, *Chlori*		141
,, Chloroformi		143
,, Cinnamomi	1 to 2 oz.	151
,, *Creasoti*		166
,, Destillata		76
,, Fœniculi	1 to 2 oz.	208
,, *Goulardi*		323
,, Laurocerasi	20 to 160 minims	259
,, *Lithiæ Effervescens. See* Liquor		266
,, *Magnesiæ Aerata*		272

Official Names in Roman; all others in Italics.

AQ to AR	Dose.	Page
Aqua Menthæ Piperitæ	1 to 2 oz.	277
,, ,, Viridis	1 to 2 oz.	278
,, *Mercurialis Nigra*		235
,, *Opii*		300
,, *Phagedænica*		233
,, ,, *Flava*		233
,, ,, *Nigra*		235
,, *Picis*		317
,, ,, *Concentrata*		318
,, Pimentæ	1 to 2 oz.	314
,, *Plumbi*		323
,, ,, *Spirituosa*		323
,, *Plumbica*		323
,, ,, *Propria*		323
,, *Potassæ Effervescens. See* Liquor		328
,, *Pyrolei Pini*		318
,, *Rabelli*		30
,, Rosæ	1 to 2 oz.	354
,, Sambuci		360
,, *Sodæ Effervescens. See* Liquor		381
,, *Vegeto-mineralis Goulardi*		323
Araroba Depurata		144
,, *Powder*		144
Araruta		275
Arbutin		416
Arctostaphylos Uva-ursi		416
Areca		78
,, *Catechu*		78
,, *Nut*		78
Arecaine		78
Arecoline		78
Argel leaves		371
Argent Purifié		80
Argenti *Iodidum* (*nascens*)		80
,, Nitras	$\frac{1}{6}$ to $\frac{1}{3}$ gr.	78
,, ,, *Caustic points*		80
,, ,, *Dilutus*		79
,, et Potassii Nitras		79
,, Oxidum	$\frac{1}{2}$ to 2 grs.	80
Argentum		78
,, *Foliatum*		80
,, *Nitricum c. Kalio Nitrico*		79
,, ,, *bis Mitigatum*		79
,, ,, *Mitigatum*		79
,, Purificatum		80
Argilla		254
Aristolochia Reticulata		373
,, *Serpentaria*		373
Armoraciæ *Infusum Compositum*		81

Official Names in Roman; all others in Italics.

AR to AS	Dose.	Page
Armoraciæ Radix		80
,, Spiritus Compositus	1 to 3 drms	81
Arnica *Montana*		81
,, *Opodeldoc*		82
,, Rhizome		81
Arnicæ *Radicis Extractum Fluidum*		82
,, Rhizoma		81
,, Tinctura	$\frac{1}{2}$ to 1 drm.	81
Aromatic Sulphuric Acid		30
,, *Vinegar*		6
Arrow-Root		275
Arseniate of Iron	$\frac{1}{16}$ gr.	191
,, ,, *Quinine*		345
,, ,, Sodium	$\frac{1}{16}$ to $\frac{1}{8}$ gr.	379
Arseniatis Sodii Liquor	5 to 10 minims	380
Arsenic, Iodide of		82
,, *White*		6
Arsenical *Caustic Powders*		8
,, *Paste for cancer*		8
,, ,, *Dentists*		8
,, Solution	2 to 8 minims	7
Arsenici *Antidotum*		7
,, *Chloridi Liquor*		8
,, *et Hydrargyri Hydriodatis Liquor.*	*See* Arsenii Iodidum	83
,, *Iodidum.* *See* Arsenii Iodidum		82
,, Liquor Hydrochloricus	2 to 8 minims	8
Arsenico Blanco		7
Arsenii *Bromidi Liquor*		82
,, et Hydrargyri Iodidi Liquor		83
,, Iodidum		82
Arsenious Acid	$\frac{1}{60}$ to $\frac{1}{12}$ gr.	6
,, *Anhydride*		6
Arsenium		82
,, *album.* *See* Acidum Arseniosum		6
Artemisia Absinthium		1
,, *Maritima*		361
Aritcles employed in chemical testing		430
Artificial Human Milk		257
Asafœtida	5 to 20 grs.	83
Asafœtidæ Enema		83
,, Pilula composita	5 to 10 grs.	84
,, Tinctura	$\frac{1}{2}$ to 1 drm.	84
Asclepedin		429
Aseptol		14
Aspidii Oleoresina		207
Aspidium Filix-Mas		207
Aspidosamin		341
,, *Hydrochlorate*		341
Aspidosperma Quebracho		341

Official Names in Roman; all others in Italics.

AS to BA	Dose.	Page
Aspidospermin		341
,, *Sulphate*		341
Assucar		358
,, *de Leite*		358
Astragalus gummifer		412
Atropa Belladonna		93
Atropina		84
Atropinæ *Injectio Hypodermica*		86
,, Lamellæ		86
,, *Oleatum*		85
,, *Salicylas*		85
,, *Sulphas*		85
,, *Sulphatis Guttæ*		86
,, ,, ,, *Fortiores*		86
,, ,, ,, *Mitiores*		86
,, ,, Liquor	1 to 4 minims	86
,, Unguentum		85
,, ,, *cum Cocaina*		85
Atropine		84
,, Discs		86
,, *Gelatine*		86
Aurantii *Amari Cortex*		86
,, Cortex		86
,, *Corticis Oleum*		88
,, *Dulcis Cortex*		86
,, *Elixir*		88
,, Floris Aqua	½ to 1 oz.	88
,, ,, Syrupus	1 to 2 drms.	89
,, *Florum Oleum*		89
,, Fructus		87
,, Infusum	1 to 2 oz.	87
,, ,, Compositum	1 to 2 oz.	87
,, Syrupus	1 to 2 drms.	87
,, Tinctura	1 to 2 drms.	87
,, ,, Recentis	1 to 2 drms.	87
,, Vinum		88
Auri et Sodii Chloridum		89
Autenriethi Unguentum		72
Axonge		38
Axungia. See Adeps		38
Azeite		294
Azotate Mercurique Liquide		229
,, *de Potasse*		334
,, ,, *Soude*		386
Azotato de Potassa		334
Azotic Acid		23
Azucar		358
Azufre Precipitado		399
,, *Sublimado*		399
Bael Fruit		92

Official Names in Roman; all others in Italics.

BA to BE	Dose.	Page
Balneum Alkalinum		383
,, *Sulphuretum*		327
Balsam of Peru	10 to 15 minims	90
,, ,, Tolu		91
,, *Friar's*		97
,, *Gurjun*		90
,, *Traumatic*		97
Balsami Peruviani Unguentum		91
,, ,, ,, *Resinosum*		91
Balsamo Opodeldoc Liquido		364
,, ,, *Solido*		364
Balsamodendron Myrrha		288
Balsamum *Canadense. See* Terebinthina Canadensis		406
,, *Copaiba Solidifactum*		164
,, *Dipterocarpi*		90
,, *Opodeldoc Liquidum*		363
,, ,, *Solidum*		364
,, Peruvianum	10 to 15 minims	90
,, Tolutanum	10 to 20 grs.	91
Banha		38
Baptisin		429
Barbadoes Aloes		44
Barbaloin		48
Barley, Pearl		224
Barometer		75
Barosma betulina		105
,, *crenulata*		105
,, *serratifolia*		105
Bath of Acidum Nitrohydrochloricum dilutum		24
Battley's Liquor Opii Sedativus		300
Baume de Vie. See Decoct. Aloes Co.		46
,, *Opodeldoc*		364
,, ,, *Liquide*		364
Bearberry Leaves		416
Beaver		132
Bebeeru Bark		290
Beberinæ Sulphas	1 to 3 grs. tonic. 5 to 10 grs. antiperiodic	92
Beer Yeast		135
Belæ Fructus		92
,, Extractum Liquidum	1 to 2 drms.	92
Beleno		238
Belladona, Pomada de		96
Belladone, Pommade de		96
Belladonna, *Aceite de*		96
,, Leaves		93
,, Root		95
Belladonnæ *Chloroformum*		96
,, Emplastrum		95
,, Extractum	$\frac{1}{4}$ to $\frac{1}{2}$ gr.	93
,, ,, Alcoholicum	$\frac{1}{16}$ to $\frac{1}{4}$ gr.	95

Official Names in Roman; all others in Italics.

BE to BI	Dose.	Page
Belladonnæ Folia		93
,, *Glycerinum*		94
,, Linimentum		95
,, ,, *Compositum*		96
,, Radix		95
,, Succus	5 to 15 minims	94
,, *Suppositoria*		94
,, Tinctura	5 to 20 minims	94
,, Unguentum		96
Benjui		96
Benzoas Sodicus		380
Benzoata de Sosa		380
Benzoate *d'Ammoniaque*		55
,, of Ammonium		55
,, ,, Lithium		265
,, ,, *Potash*		328
,, *de Soude*		380
Benzoated Lard		38
Benzoato de Soda		380
Benzoic Acid	5 to 15 grs.	8
,, ,, *Gauze*		9
Benzoin		96
,, *Flowers of*		8
Benzoini *Insufflatio*		97
,, *Lotio*		97
,, Tinctura Composita	½ to 1 drm.	97
,, ,, *Simplex*		97
,, *Unguentum*		97
,, *Vapor*		97
Benzoinum	10 to 30 grs.	96
Benzoyl, Hydrate of		8
Benzoyl-Sulphonic-imide		357
Berberidis, Extractum Fluidum		97
Berberinæ Phosphas		97
Berberine		97, 237
Berberis		97
,, *Vulgaris*		97
Beta-Naphthol		290
Betel Nut		78
Betol		290
Betula Alba		97
,, *Lenta*		28, 210
Betulæ Albæ Oleum		97
,, ,, *Unguentum*		98
Beurre de Cacao		408
,, ,, *Muscade*		288
Biborate of Soda		103
Bicarbonas Kalicus		328
,, *Natricus*		381
,, *Sodæ*		381

BI to BL	Dose.	Page
Bicarbonate of Potassium		328
,, ,, Sodium		380
,, *de Soude*		381
Bicarbonato de Potassa		328
,, ,, *Soda*		381
Bichloride of Methylene		144
Bichromate of Potassium		328
Bilis bovina depurata		188
Bilva		92
Bimeconate of Morphine Solution		283
Biniodide of Mercury		227
Birch, Common European		98
,, *Oil of*		97
,, ,, ,, *Sweet*		28, 210
Bismuth		98
Bismuthi et Ammonii Citras	2 to 5 grs.	100
,, ,, ,, Citratis Liquor	½ to 1 drm.	99
,, Carbonas	5 to 20 grs.	98
,, Citras	2 to 5 grs.	99
,, *Cremor*		101
,, *Lotio*		102
,, *Nitras*		100
,, Oxidum	5 to 15 grs.	101
,, ,, *Hydratum*		101
,, *Salicylas*		102
,, *Subiodidum*		102
,, Subnitras	5 to 20 grs.	101
,, Trochisci . . . . 2 grs. each.	1 to 6 loz.	102
,, *Unguentum*		102
Bismuthum		98
,, *Nitricum præcipitatum*		101
,, Purificatum		98
,, *Sub-nitricum*		101
Bisulphide of Carbon		128
Bitartras Kalicus		337
,, *Potassæ depuratus*		337
Bitartrato de Potassa		337
Bitter Almond		60
,, Orange Peel		86
Bittersweet		177
Black Antimony		70
,, *Catechu*		133
,, *Cohosh*		145
,, *Drop*		300
,, *Haw*		418
,, Oxide of Manganese		274
,, Pepper		315
,, *Pitch*		318
,, *Snake Root*		145
,, *Wash. See* Lotio Hydrarg. Nigra		235

BL to BR	Dose.	Page
Bladder-Wrack		208
Blanc de Baleine		136
Blanchard's Pills		197
Blaud's Pills		194
Blistering Collodion		124
,, Liquid		124
,, Paper		123
Blue Gum Tree. See Eucalyptus		183
Bodelha.		208
Bois de Campêche		222
,, ,, *Gentil*		279
,, ,, *Panama*		342
Boldine		103
Boldo		103
,, *Tinctura*		103
Bolus Alba		254
Bone Ash		301
,, Black		126
Boni's blister		125
Boracic Acid		9
Boracis *Gargarisma*		103
,, Glycerinum	½ to 1½ drms.	103
,, *Linctus*		104
,, *Lotio*		104
,, Mel		104
,, *Tinctura Myrrhæ et*		104
,, *Unguentum*		104
Borate of Ammonium		55
,, *Magnesium, Solution*		10
Borax	5 to 30 grs.	103
Boric Acid	5 to 10 grs.	9
,, ,, *Gauze*		10
,, ,, *Lint*		10
,, ,, Ointment		10
,, ,, *Pastillus*		10
,, ,, *Wool*		10
Boro-glyceride		10
Bos Taurus		257
Bougies Iodoform and Eucalyptus		246
,, *Medicated*		428
Brandish's Alkaline Solution		326
Brandy		392
,, Mixture		392
Brassica Alba		374
,, *Nigra*		374
Brayera		174
Brea		317
Bread Crumb		280
Brecknell's Pure Yellow Soap		364
Brometo de Potassio		329

Official Names in Roman; all others in Italics.

BR to CA	Dose.	Page
Brometum Kalicum		329
,, *Natricum*		382
Bromi, Liquor		104
Bromide of Ammonium	5 to 20 grs.	55
,, ,, ,, *Lozenges*		56
,, ,, *Ethyl*		42
,, ,, *Iron*		192
,, ,, *Lithium*		265
,, ,, *Nickel*		291
,, ,, Potassium	20 to 60 grs.	329
,, ,, Sodium		381
,, ,, *Zinc*		421
Bromine		104
Bromum		104
Bromure de Potassium		329
,, ,, *Sodium*		382
Bromuretum Potassii		329
Bromuro Potasico		329
,, *Sodico*		382
Broom Tops		369
Brucine		293
Bryone, Alcoolature de		105
Bryonia		105
,, *Alba*		105
,, *Dioica*		105
Bryoniæ, Tinctura		105
Bucco		105
Buchu Folia	20 to 40 grs.	105
,, Infusum	1 to 4 oz.	105
,, Tinctura	1 to 4 drms.	105
Buckbean		279
Bulbus Scillæ		368
Burgundy Pitch		316
Burnett's Solution		422
Busserole		416
Butyl-Chloral Hydras	1 to 2 grs.	105
,, ,, *Mistura*		106
,, ,, *Pilula*		106
,, ,, *Syrupus*		106
Buxine		290
Buxus Sempervirens		290
Byne		106
Bynes Extractum		106
Cabbage Rose Petals		353
Cacao Butter		408
Cachou Tinctura		133
Cadmii Iodidi Unguentum		107
,, *Iodidum*		107
,, *Sulphas*		107
Caffeina	1 to 5 grs.	108

Official Names in Roman; all others in Italics.

CA

	Dose.	Page
Caffeinæ Citras	2 to 10 grs.	108
,, *Hydrobromas*		109
,, *Sodio-Salicylas.*		109
,, *Tri-Iodidum*		109
Caffeine		108
,, *Granular Effervescing Citrate of*		109
,, ,, ,, *Hydrobromate of*		109
Cajuputi Oleum	1 to 3 minims	109
,, Spiritus	50 to 100 minims	110
Cal Chlorada		115
Calabar Bean	1 to 4 grs.	310
Calamina Præparata		110
Calaminæ Unguentum		110
Calamine		110
Calcaria Caustica Soluta		112
,, *Chlorata*		115
,, *Hypochlorosa*		115
,, ,, *Soluta*		116
,, *Hypophosphorosa*		113
,, *Phosphorica*		114
Calcariæ Aqua		112
Calcii Carbonas Præcipitata	10 to 60 grs.	110
,, Chloridi Liquor		111
,, Chloridum		111
,, Hydras		111
,, *Hypochloris*		115
,, Hypophosphis	5 to 10 grs.	113
,, Phosphas	10 to 40 grs.	114
,, ,, *Præcipitatus*		114
,, Sulphas		114
,, Sulphidum		119
Calcined Gypsum		114
Calcis, *Aqua*		112
,, *Hypophosphitis Syrupus*		114
,, *Lactophosphatis Syrupus*		22
,, Linimentum		112
,, Liquor	½ to 2 oz.	112
,, ,, Chlorinatæ	20 to 40 minims	116
,, ,, Saccharatus	15 to 60 minims	112
Calcium		110
,, *Chloratum Siccum*		111
,, ,, *Fusum*		111
,, *Hypochlorosum*		115
,, *Hypophosphorosum*		113
,, *Phosphoricum*		114
Calendula		117
,, *Officinalis*		117
Calendulæ Florum Tinctura		117
Calomel		234
Calomelas. See Hydr. Subchloridum		234

CA	Dose.	Page
Calumba Root		117
Calumbæ Extractum	2 to 10 grs.	117
,, ,, *Fluidum*		117
,, Infusum	1 to 2 oz.	117
,, Radix	5 to 20 grs.	117
,, Tinctura	$\frac{1}{2}$ to 2 drms.	118
Calx		114
,, *Chlorata*		115
,, Chlorinata		115
,, *Hydrargyri Alba*		236
,, Sulphurata	$\frac{1}{10}$ to 1 gr.	116
Cambogia	1 to 5 grs.	118
Cambogiæ Pilula Composita	5 to 10 grs.	118
Camellia Thea		108
Camomille		67
Campeche		222
Camphor		119
,, *Balls*		121
Camphora	1 to 10 grs.	119
,, *c. Cretâ*		121
,, *Monobromata*		121
Camphoræ Aqua	1 to 2 oz.	119
,, *Ceratum*		121
,, *Essentia*		121
,, Linimentum		120
,, ,, Compositum		121
,, *Mistura*		119
,, Spiritus	10 to 30 minims	120
,, ,, *Fortior*		121
,, Tinct. Composita	15 to 60 minims	120
Camphorated Oil		120
,, *Vinegar*		121
Camphoric Acid		121
Canada Balsam. *See* Terebinthina Canadense		406
,, *Fleabane, Oil of*		182
Canadian Hemp		74
Canamo		122
Canarium Commune		179
Canella		151
,, *Alba*		121
,, *Bark*		121
Canellæ Cortex		121
Canhamo		122
Cannabinæ Tannas		122
Cannabinon		123
Cannabis Indica		122
,, Indicæ Extractum	$\frac{1}{4}$ to 1 grain	122
,, ,, Tinctura	5 to 20 minims	122
,, *Sativa*		122
Cannelle		151

Official Names in Roman; all others in Italics.

CA	Dose.	Page
Cantharides		123
Cantharidine		125
Cantharidis Acetum		123
,, Emplastrum		124
,, *Linimentum*		124
,, *Liquor Concentratus*		125
,, Tinctura	5 to 20 minims	124
,, Unguentum		125
Cantharis		123
,, *Vesicatoria*		123
Capsici Fructus	½ to 1 gr.	125
,, *Emplastrum*		126
,, *Oleo-resina*		126
,, *Oleo-resinæ, Unguentum*		126
,, Tinctura	10 to 20 minims	126
,, ,, *Conc. (Turnbull's)*		126
,, ,, *Fortior*		126
Capsicin		126
Capsicum fastigiatum		125
,, *Fruit*		125
Capsulæ Olei Ricini		353
,, ,, *Santali*		361
,, *Picis*		318
,, *Terebene*		406
Capsules of Cascara		349
Caraway Fruit		129
Carbazotic Acid		27
Carbo Animalis		126
,, ,, Purificatus	20 to 60 grs.	126
,, Ligni	20 to 60 grs.	127
Carbolate of Mercury		233
,, ,, *Quinine*		345
Carbolic Acid	1 to 3 grs.	10
,, ,, *Crude*		13
,, ,, *Dressings*		13
,, ,, *Gargle*		12
,, ,, *Gauze*		13
,, ,, Glycerine of	5 to 10 minims	13
,, ,, *Inhalation*		12
,, ,, *Injection*		12
,, ,, ,, *hypodermic*		12
,, ,, *Ligatures*		13
,, ,, *Lint*		13
,, ,, Liquified		12
,, ,, *Lotion*		12, 13
,, ,, *Oil for Catheters*		13
,, ,, Ointment		13
,, ,, *Plaster*		13
,, ,, *Protective*		13

Official Names in Roman; all others in Italics.

CA	Dose.	Page
Carbolic Acid *Soap*		364
,, ,, *Spray*		12
,, ,, Suppositories with Soap		13
,, ,, *Sutures*		13
,, ,, *Tow*		13
,, ,, *Wool*		13
Carbolized Oil		12
Carbon, Bisulphide of		128
,, *Tetrachloride of*		144
Carbonas Ferri		201
,, ,, *Saccharatus*		193
,, *Kalicus*		330
,, *Plumbicus*		320
,, *Potassæ*		330
Carbonate de Plomb		320
,, ,, *Potasse Pur*		330
Carbonate of Ammonia		56
,, ,, Bismuth		98
,, ,, Calcium, Precipitated	10 to 60 grs	110
,, ,, Iron, Saccharated		193
,, ,, Lead		320
,, ,, *Lime, Precipitated*		110
,, ,, Lithium		266
,, ,, Magnesium		271
,, ,, Potassium		329
,, ,, Sodium		382
,, ,, Zinc		421
Carbonato de Potassa		330
,, *Potasico*		330
,, *(bi)* ,,		328
,, *(bi) Sodico*		381
Carbonei Bisulphidum		128
Carbonis Cataplasma		127
,, *Liquor Detergens*		317
Cardamomi *Oleum*		129
,, Semina	5 to 20 grs.	128
,, *Tinctura*	½ to 2 drms.	129
,, ,, Composita		128
Cardamoms	5 to 20 grs.	128
Cardenillo		171
Carica Papaya		303
Carmine		155
Carmini Liquor		155
Carnis Extractum		129
Carrageen		138
,, *Gelatina*		138
,, *Saccharum*		138
Carron Oil		264
Carui Aqua	1 to 2 oz.	129

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CA	Dose.	Page
Carui Fructus		129
,, Oleum	1 to 4 minims	130
Carum Carui		129
Carvao Animal		126
Carvi Aetheroleum		130
Caryophylli Infusum	1 to 2 oz.	130
,, Oleum	1 to 4 minims	130
Caryophyllum	5 to 10 grs.	130
Casca Bark		183
Cascara Sagrada		349
,, ,, *Capsules*		349
,, ,, *Elixir*		349
,, ,, Extractum	2 to 8 grs.	349
,, ,, ,, Liquidum	½ to 2 drms.	349
,, ,, ,, ,, *Insipidum*		349
,, ,, *Syrupus*		349
Cascarilla Bark		130
Cascarillæ Cortex	10 to 30 grs.	130
,, Infusum	1 to 2 oz.	131
,, Tinctura	½ to 2 drms.	131
Cassia		151, 371
,, *Acutifolia*		371
,, *Angustifolia*		371
,, *Fistula*		131
,, Pulp		131
Cassiæ Pulpa	Laxative, 60 to 120 grs. Purgative, 1 to 2 oz.	131
Castile Soap		362
Castor *Fiber*		132
,, Oil		352
Castorei Tinctura		132
Castoreum		132
Cataplasma *Aluminis*		51
,, Carbonis		127
,, Conii		161
,, Fermenti		135
,, Lini		263
,, *Micæ Panis*		280
,, Sinapis		374
,, Sodæ Chlorinatæ		379
Cataplasmata (*group*)		132
Catechu	10 to 30 grs.	132
,, *Black*		133
,, Infusum	1 to 2 oz.	133
,, *Nigrum*		133
,, *Pallidum*		132
,, *Pegu*		133
,, Pulvis Compositus	20 to 40 grs.	133
,, Tinctura	½ to 2 drms.	133
,, Trochisci 1 gr. in each.	1 to 6 loz.	133
Cathartic Acid		373

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CA to CE	Dose.	Page
Catheters, Oil for		13
Cato		132
Caulophyllin		429
Caustic *Points*		80
,, Potash		325
,, Soda		376
Causticum Iodi		248
Cayeput, Esencia de		109
Cebada		224
Cedrine		374
Celloidin		340
Cephaëlis Ipecacuanha		249
Cera Alba		133
,, *Amarella*		135
,, *branca*		134
,, Flava		134
Ceræ Unguentum		134
Cérat Saturné		323
,, *Simple*		134
Cerato Simple		134
Ceratum Album		134
,, *Camphoræ*		121
,, *Cetacei*		137
,, *Flavum*		134
,, *Plumbi Acetatis*		320
,, ,, *Subacetatis.*		323
Cereum Unguentum		134
Cerevisiæ Fermenti Cataplasma		135
,, Fermentum	½ to 1 oz.	135
Cerii Oxalas	B. P. Dose 1 to 2 grs. Dose 5 to 10 grs.	135
Ceroto Simples		134
Cerussa		320
Cetacei *Ceratum*		137
,, *Mistura*		137
,, Unguentum		136
,, ,, *sine Benzoino*		137
Cetaceum	20 to 60 grs.	136
Cetraria		137
,, *Islandica*		137
Cetrariæ Decoctum	1 to 4 oz.	137
,, *Gelatina*		138
,, *Pastillus*		138
,, *Saccharum*		137
Cevada Santa		224
Cevadilha		356
Cevadic Acid		417
Cevadilla		356
Cevadille		356
Cevadilline		417
Cevadine		417, 418

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CH	Dose.	Page
Chalk		167
,, Prepared		167
Chalybeate Plaster		201
Chamomile Flowers		67
Chamomillæ Oleum Citratum		68
Chanvre		122
Charbon Végétal		127
Charcoal, Animal		126
,, ,, Purified	20 to 60 grs.	127
,, *Biscuits*		128
,, *Capsules*		128
,, *Cautery* (*Getchell's*)		128
,, *Respirators*		127
,, Wood		127
Charta *Cantharidis*		124
,, Epispastica		123
,, *Nitrata*		334
,, ,, *et Chlorata*		334
,, Sinapis		375
,, *Sinapisata*		375
Chaulmugra Oil		221
Chaux Éteinte		112
Chelsea Pensioner		400
Chemical Food (*Squire's*)		203
Cherry-laurel Leaves		259
Cheyne's Bougies		246
Chian Turpentine		406
Chien-dent		413
China Calisaya		146
,, *Clay*		254
,, *Flava*		146
,, *Fusca*		146
,, *Rubra*		146
,, *Succirubra*		146
Chinæ Calisayæ Tinctura		149
,, *Flavæ* ,,		149
,, *Infusum Frigide Paratum*		150
,, *Rubræ Tinctura*		149
,, *Tinctura*		149
,, ,, *Comp.*		150
,, ,, *Simplex*		149
Chininum Ferro Citricum		196
,, *Hydrochloratum*		343
,, *Hydrochloricum*		342
,, *Sulfuricum*		344
Chinoidin		347
Chinolin		138
,, *Tartrate*		138
Chirata		138
Chiratæ Infusum	1 to 2 oz.	139

CH	Dose.	Page
Chiratæ Tinctura	½ to 2 drms.	139
Chiretta		138
Chloral		140
,, *cum Camphora*		141
,, ,, ,, *et Cocaina*		141
,, Hydras	5 to 30 grs.	139
,, *Hydraté*		140
,, *et Phenol*		141
,, *Suppositoria*		141
,, Syrup of	½ to 2 drms.	140
Chloralamid		141
Chloralum		49
,, *Hydratum*		140
,, ,, *Crystallisatum*		140
Chloras Kalicus		330
,, *Potassæ*		330
Chlorate de Potasse		330
,, of Potassium		330
Chlorato de Potassa		330
,, *Potasico*		330
Chlore Dissous		141
Chloreto Amidetum Hydrargyricum		236
,, *de Calcio*		111
,, *Ferrico anhydro*		198
,, ,, *crystallisado*		198
,, *Mercurico*		232
,, *Mercuroso*		234
,, *de Zinco*		422
Chloretum Amido-hydrargyricum		236
,, *Chinicum*		342
,, *Hydrargyrico-Ammonicum*		236
,, *Hydrargyricum*		232
,, ,, *Corrosivum*		232
,, *Hydrargyrosum*		234
,, *Zincicum*		421
Chlorhydrate de Morphine		284
Chlorhydrato de Quinina		343
Chlorhydric Acid		19
Chlori *Aqua*		141
,, *Fumigium*		116
,, Liquor	10 to 20 minims	141, 142
,, Vapor. *Vide* Calx Chlorinata		116
Chloric Ether		143
Chloride of *Aluminium Solution*		49
,, ,, Ammonium		58
,, ,, ,, *Draught*		58
,, ,, ,, *Lotion*		58
,, ,, ,, *Lozenges*		58
,, ,, *Antimony, Solution*		69
,, ,, Calcium		111

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CH to CI	Dose.	Page
Chloride of *Gold and Soda*		89
,, ,, *Methyl*		279
,, ,, Sodium		383
,, ,, *Sulphur*		400
,, ,, Zinc		421
,, ,, ,, *Points*		422
,, ,, ,, ,, *Compound*		422
Chlorinated Lime		115
Chlorine, Solution of	10 to 20 minims	141, 142
Chloroform		142
Chloroformi Aqua	½ to 2 oz.	143
,, Linimentum		143
,, et Morphinæ Tinctura	5 to 10 minims	143
,, Spiritus	10 to 60 minims	143
,, Tinct. Comp.	20 to 60 minims	143
,, *Vapor*		144
Chloroformum	1 to 5 minims	142
,, *Aconiti*		36
,, *Belladonnæ*		96
,, *Camphoratum*		144
,, *Hyoscyami*		239
,, *Purificatum*		142
,, *Purum*		142
Chlorohydrate de Quinine Basique		343
Chlorum Solutum		141
Chlorure de Calcium		111
,, ,, *Chaux Sec*		115
,, ,, *Mercureux Precipité*		234
,, ,, *Mercurique*		232
,, ,, *Soude Liquide*		378
,, ,, *Zinc*		421
Chloruretum Calcii		111
,, *Ferricum*		198
,, ,, *Anhydricum*		198
,, *Zinci*		421
Cholera Mixture		168
Chondodendron tomentosum		306
Christison's Pill		160
Christmas Rose		223
Chromic Acid		14
,, ,, Solution		15
,, *Anhydride*		14
Chrysarobin		144
,, *Plaster Mull*		145
Chrysarobini *Pigmentum*		145
,, Unguentum		144
Chrysarobinum		144
Chrysophanic Acid		144
Cianuro Mercurico		227
Cicutæ Extractum		161

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CI	Dose.	Page
Cicutæ Folia		160
,, *Fructus*		162
,, *Tinctura*		162
Cicutine		162
Ciguë Feuille		160
,, *Fruit*		162
Cimicifuga		145
,, *Racemosa*		145
Cimicifugæ Extractum Liquidum	3 to 30 minims	145
,, Rhizoma		145
,, Tinctura	15 to 60 minims	145
Cimicifugin		429
Cimolite		49
Cinchona Bark		146
,, ,, Red		147
,, *Calisaya*		146
,, *Condaminea*		146
,, *Flava*		146
,, *Fusca*		146
,, *Government Febrifuge*		146
,, *Lancifolia*		146
,, *Officinalis*		146
,, *Peruviana*		146
,, *Rubra*		146
,, *Succirubra*		146, 147
Cinchonæ Cortex		146
,, Decoctum	1 to 2 oz.	148
,, Extractum *Fluidum* (*U.S.*)		149
,, ,, Liquidum	5 to 10 minims	148
,, Infusum Acidum	1 to 2 oz.	149
,, Rubræ Cortex		147
,, Tinctura	½ to 2 drms.	149
,, ,, *Huxham's*		150
,, ,, Composita	½ to 2 drms.	149
Cinchonidinæ Sulphas	1 to 10 grs.	150
Cinchoninæ Sulphas	1 to 10 grs.	150
Cinnamomi Aqua	1 to 2 oz.	151
,, Cortex	10 to 20 grs.	151
,, Oleum	1 to 4 minims	151
,, Pulvis Compositus	3 to 10 grs.	152
,, Spiritus	1 to 2 drms.	152
,, Tinctura	½ to 2 drms	152
Cinnamomum Zeylanicum		151
,, *Camphora*		119
Cinnamon Bark		151
Cire Blanche		134
,, *Jaune*		135
Ciruelo		337
Cissampelos Pareira		290

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CI to CO	Dose.	Page
Citras Ferri		195
,, *Ferrico-Ammonicus*		195
,, *Ferrico Chininicus*		196
Citrate of Bismuth		99
,, ,, ,, and Ammonium		100
,, ,, Caffeine		108
,, ,, ,, *Granular Effervescing*		109
,, *de Fer Ammoniacal*		195
,, of Iron and Ammonium		194
,, ,, ,, Quinine		195
,, ,, Lithium		266
,, ,, Potassium		331
,, ,, *Quinine*		346
Citrato de Ferro Ammoniacal		195
,, ,, *et de Quinina*		196
,, *Ferrico-Amonico*		195
,, *Ferrico-Quininico*		196
Citric Acid		15
Citron		260
Citrullus Colocynthis		159
Citrus Aurantium		88
,, *Bergamia*		15
,, *Limonum*		260
,, *Vulgaris*		86
Clarified Honey		276
Claviceps Purpurea		180
Clavo		130
Clay, China		254
,, *Porcelain*		254
Cleavers		209
Clemen's Solution		82
Cloruro Calcico		111
,, *Ferrico*		198
,, *Mercurico*		232
,, *Mercurioso*		234
,, *Quinico*		343
,, *Zincico*		422
Clove		130
Clover		413
Clutton's Febrifuge Spirit		41
Coal Tar		317
Coca		152
,, *del Peru*		152
Cocæ *Extractum*		153
,, ,, Liquidum	$\frac{1}{2}$ to 2 drms.	152
,, *Vinum*		153
Cocainæ Hydrochloras	$\frac{1}{6}$ to 1 gr.	153
,, *Hydrochloratis Guttæ*		154
,, Lamellæ		154
Cocaine		154

CO	Dose.	Page
Cocaine Hydrochlorate of		153
Cocci Tinctura	30 to 90 minims	154
Coccionella		154
Cocculus Indicus		312
Coccus		154
,, *Cacti*		154
Cochenille		154
Cochineal		154
Cochinilla		154
Cochlearia Armoracia		80
Cochonilha		154
Cocimiento de Zarzaparrilla		365
,, *Edulcorante de Zarzaparrilla*		365
Cod Liver Oil		286
,, ,, ,, *Emulsion*		286
Codeina	$\frac{1}{4}$ to 2 grs.	155
Codeinæ Phosphas		155
,, *Syrupus*		155
Codeine		155
,, *Pastilles*		155
Coentro		164
Coffea Arabica		108
Coffeinum		108
Cohosh, Black		145
Coing		174
Colantro		164
Colchici Cormus	2 to 8 grs.	156
,, Extractum	$\frac{1}{2}$ to 2 grs.	156
,, ,, Aceticum	$\frac{1}{2}$ to 2 grs.	156
,, *Florum Tinctura*		157
,, *Mistura*		157
,, Semina		157
,, Seminum Tinctura	10 to 30 minims	157
,, *Tinctura Composita*		157
,, Vinum	10 to 30 minims	156
Colchicum *autumnale*		156
,, Corm		156
,, Seeds		157
Cold Cream		134
Colla Piscium		241
Collinsonia		157
,, *Canadensis*		157
Collinsoniæ, Tinctura		157
Collodion		158
,, *Hæmostatic*		158
Collodium		158
,, *Elasticum*		158
,, Flexile		158
,, *Salicylicum*		29
,, Vesicans		124

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CO	Dose.	Page
Colloid, Styptic		158
Colloxylinum		340
Collyrium Ammoniæ Acetatis		54
Colocynthidis *Extractum*		159
,, ,, Compositum	2 to 5 grs.	159
,, Pilula Composita	5 to 10 grs.	159
,, ,, et Hyoscyami	5 to 10 grs.	160
,, Pulpa	2 to 8 grs.	159
,, *Tinctura*		160
Colocynth Pulp		159
Colofonia		347
Colophone		347
Colophonia		347
Colophonium		347
,, *Depuratum Flavum*		347
Coloquinte		159
Coloquintida		159
Coloquintidas		159
Comfrey Root		402
Common Salt		383
Concombre Sauvage		177
Condurango Cortex		160
Condy's Fluid		335
Confectio *Amygdalæ. See* Pulv. Amygd. Comp.		62
,, *Aromatica. See* Pulvis Cretæ Aromaticus		167
,, Opii	5 to 20 grs.	297
,, Piperis	60 to 120 grs.	315
,, Rosæ Caninæ	1 drm.	353
,, ,, Gallicæ	½ to 1 drm.	354
,, *Rutæ*		356
,, Scammonii	10 to 30 grs.	367
,, Sennæ	60 to 120 grs.	371
,, Sulphuris	1 to 2 drms.	400
,, Terebinthinæ	1 to 4 drms.	407
Confectiones (*group*)		160
Conii *Abstractum*		161
,, Cataplasma		161
,, Extractum	2 to 8 grs.	161
,, Folia	2 to 8 grs.	160
,, Fructus		162
,, Pilula Composita	5 to 10 grs.	161
,, Succus	30 to 60 minims	161
,, Tinctura	½ to 1 drm.	162
Conina		162
Coninæ *Hydrobromas.*		162
,, Vapor		162
Conium maculatum		160, 162
Conserve de Cynorrhodons		353
Consolda Maior		402
Consoude		402

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Convallaria		162
,, *Majalis*		162
Convallariæ Extractum		163
,, *Tinctura*		163
Convolvulin		252
Convolvulus Scammonia		366
Copaiba	20 to 60 minims	163
Copaibæ *Mistura*		164
,, Oleum	5 to 20 minims	163
,, *Pasta*		164
,, *Pilula*		164
,, *Resina*		164
Copahu		163
Copaifera Langsdorffii		163
Copaiva		163
Copper		170
Copying Gelatine		211
Coquelicot		352
Coriander Fruit		164
Coriandri Fructus	20 to 60 grs.	164
,, Oleum	1 to 4 minims	164
Coriandrum Sativum		164
Cornezuelo de Centeno		181
Cornin		429
Cornutine		182
Corrosive Sublimate		232
Cortex Frangulæ		348
Corydalin		429
Coto		164
,, *Tinctura*		165
Cotoin		165
Coton		217
Cotton, *Medicated pledgets of*		428
,, Wool		216
,, ,, *Respirators of*		217
Court Plaster		241
Couso		174
Cousso		174
Cozimento de Amido		64
Cravagem de Centeio		181
Cravinho		130
Crayons d'Azotate d'Argent Mitigé		79
,, *de Tannin*		33
Cream, Cold		134
,, *of Tartar. See* Potassii Tartras Acida		336
,, ,, *Soluble*		337
Creasote		165
Creasoti *Aqua*		166
,, Mistura	1 to 2 oz.	166
,, ,, *c. Opio*		166

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CR to CU	Dose.	Page
Creasoti Unguentum		166
,, Vapor		166
Creasotum	1 to 3 minims	165
Creeping Couch Grass		413
Cremor Bismuthi		101
,, *Lithargyri*		323
,, *Tartaro*		337
Creosol		165
Cresol		16
Cresylic Acid		16
Creta		167
,, *Gallica*		49
,, Præparata	10 to 60 grs.	167
Cretæ Mistura	1 to 2 oz.	167
,, Pulvis Aromaticus	10 to 60 grs.	167
,, ,, ,, cum Opio	10 to 40 grs.	168
,, *Unguentum*		168
Croci, *Glycerinum*		168
,, *Syrupus*		168
,, Tinctura	$\frac{1}{2}$ to 2 drms.	168
Crocus		168
,, *of Mars*		201
,, *Sativus*		168
Croton *Eluteria*		130
,, Oil		168
,, ,, *Pencils*		169
,, *Tiglium*		168
Croton-chloral Hydrate		105
Crotonis Linimentum		169
,, Oleum	$\frac{1}{3}$ to 1 minim	168
Cubeba	1 to 2 drms.	169
Cubebæ *Extractum Fluidum*		170
,, Oleo-Resina		170
,, Oleum	5 to 20 minims	170
,, Tinctura	1 to 2 drms.	170
Cubebs		169
Cucumber, Squirting		177
Cupri *Acetas*		171
,, Nitras		171
,, *Oleas*		172
,, *Oleatis, Unguentum*		172
,, *Subacetas*		171
,, Sulphas	$\frac{1}{4}$ gr. gradually increased to 2 grs.—10 grs. an emetic	171
,, *Sulphatis, Guttæ*		172
,, *Sulphocarbolas*		14
Cuprum		170
,, *Aluminatum*		172
Curare		173
,, *Injectio Hypodermica*		173
Curarina		173

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CU to DE	Dose.	Page
Curd Soap		361
Cusparia Bark		173
Cuspariæ Cortex	10 to 40 grs.	173
,, Infusum	1 to 2 oz.	174
Cusparine		173
Cusso	¼ to ½ oz.	174
,, Infusum	4 to 8 oz.	174
Cutch		133
Cyaneto Mercurico		227
Cyanhydric Acid		20
Cyanide of Potassium		331
Cyanure Mercurique		227
Cyanuretum Hydrargyri		227
Cydonia Vulgaris		174
Cydonii Decoctum		174
,, *Mucilago*		174
Cydonium		174
Cynips Gallæ-tinctoriæ		209
Cynorrhodon		353
Cynorrhodons, Conserve de		353
Cypripedin		429
Cytisus scoparius		369
Damiana		174
Damianæ Extractum		175
,, ,, *Liquidum*		175
Damson, Mountain		374
Dandelion Root		404
Daphne Gnidium		280
,, *Laureola*		279
,, *Mezereum*		279
Datura Stramonium		395
Daturina		396
Daturinæ, Guttæ		396
,, *Unguentum*		396
Deadly Nightshade		93
Decocta (*group*)		175
Decoctum Aloes compositum	½ oz. to 2 oz.	46
,, ,, ,, *Squire*		46
,, *Amyli*		64
,, Cetrariæ	1 to 4 oz.	137
,, Cinchonæ	1 to 2 oz.	148
,, *Cydonii*		174
,, *Gallæ*		210
,, Granati Radicis	1 to 2 oz.	217
,, Hæmatoxyli	1 to 2 oz.	222
,, Hordei	1 to 2 oz.	224
,, Papaveris		304
,, ,, *Concentratum*		304
,, Pareiræ	1 to 2 oz.	307
,, Quercûs	1 to 2 oz.	342

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DE to DR	Dose.	Page
Decoctum Quercus *Aluminatum*		342
,, *Ricini Foliorum*		353
,, *Sarsaparillæ Compositum, Fortius and Mitius*		365
,, Sarsæ	10 to 20 oz. } per diem	365
,, ,, Compositum	10 to 20 oz.	
,, Scoparii	2 to 4 oz.	369
,, Taraxaci	2 to 4 oz.	405
,, *Tritici*		413
,, *Ulmi*		414
,, *Zittmanni, Fortius and Mitius*		365
Dedaleira		175
Delphinina		395
Delphinium Staphisagria		394
Deutoioduretum Hydrargyri		227
De Valangin's Solution		8
Dextrotartaric Acid		33
Dialysed Iron		200
Diastase, Malt		106
,, *Pancreatic*		301
Dichopsis Gutta		221
Diethyl-sulphon-dimethyl-methane		398
Digital		175
Digitalin		176
,, *German*		176
,, *Homolle's*		176
,, *Nativelle's*		176
Digitalinum		176
Digitalis Folia	½ to 2 grs.	175
,, Infusum	¼ to ½ oz.	176
,, *Pilula Composita*		176
,, *purpurea*		175
,, *Succus*		176
,, Tinctura	10 to 30 minims	176
Dill Fruit		65
Dimethylethyl Carbinol		63
Dimethyloxychinizin		73
Diosma. See Buchu		105
Dipterocarpus Lævis		90
Distilled Water		76
Doce-amarga		177
Dog-Rose Fruit		353
Dolomite		270
Donovan's Solution (Arsenic)		83
Dorema Ammoniacum		51
Dormideiras		303
Douce-amère		177
Dover's Powder		250
Dried Alum		50
,, Carbonate of Sodium		382
,, Sulphate of Iron		204

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Duboisinæ, Sulphas 177
Dugong Oil 177
Dulcamara 177
Dulcamaræ Extractum Fluidum 177
,, *Infusum* 177
Dusting Powder 423
Easton's Syrup 203
Eau Camphrée 119
,, *de Chaux* 112
,, ,, *Goudron* 318
,, ,, *Luce* 54
,, *distillée de Cannelle* 151
,, ,, ,, *Fleur d'Oranger* 88
,, ,, ,, *Laitue* 258
,, ,, ,, *Sureau* 360
,, *Magnesienne* 272
,, *Régale* 24
Ecbalii Fructus 177
Ecbalium Elaterium 177
Eclectic Remedies 429
Effervescent Citro-tartrate of Sodium 383
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,, ,, Socotrinæ	1 to 3 grs.	46
,, Anthemidis	2 to 10 grs.	67
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,, Belæ Liquidum	1 to 2 drms.	93
,, Belladonnæ	$\frac{1}{4}$ to $\frac{1}{2}$ gr.	93
,, ,, Alcoholicum	$\frac{1}{16}$ to $\frac{1}{4}$ gr.	95
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,, Gentianæ	2 to 10 grs.	212
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,, ,, Liquidum	1 drm.	215
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,, ,, *Liquidum*		218
,, *Guaranæ Fluidum*		220
,, *Gummi Rubri Liquidum*		220
,, Hæmatoxyli	10 to 30 grs.	222
,, ,, *Liquidum*		222
,, *Hamamelidis*		223
,, ,, *Fluidum*		223
,, *Hydrastis Fluidum*		237
,, Hyoscyami	3 to 6 grs.	239
,, *Ignatiæ Amaræ*		242
,, Jaborandi	2 to 10 grs.	251
,, Jalapæ	5 to 15 grs.	252
,, Krameriæ	5 to 20 grs.	256
,, Lactucæ	5 to 10 grs.	257
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,, ,, Liquidum	10 to 40 minims	298
,, Papaveris	2 to 5 grs.	304
,, ,, *Liquidum*		304
,, Pareiræ	10 to 30 grs.	307
,, ,, Liquidum	$\frac{1}{2}$ to 2 drms.	307
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,, Quassiæ	3 to 5 grs.	341
,, Rhamni Frangulæ	15 to 60 grs.	348
,, ,, ,, Liquidum	1 to 4 drms.	348
,, Rhei	3 to 6 grs.	350
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,, Sarsæ Liquidum	1 to 4 drms.	365
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,, Taraxaci	5 to 15 grs.	405
,, ,, Liquidum	$\frac{1}{4}$ to 2 drms.	405
,, *Tritici Liquidum*		413
,, *Viburni Fluidum*		418
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,, ,, Tinctura	5 to 30 minims	191
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,, et Ammonii Citras	5 to 10 grs.	194
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,, Arsenias	$\frac{1}{16}$ to $\frac{1}{2}$ gr.	191
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,, ,, *Syrupus*		192
,, *Bromidum*		192
,, Carbonas Saccharata	5 to 20 grs.	193
,, Carbonatis Pilula	5 to 20 grs.	194
,, *Chloridum*		198
,, *Chloroxydi Liquor*		200
,, Citratis Vinum	1 to 4 drms.	195
,, ,, *Oxydatum Ammoniatum*		195
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,, ,, Pilula	3 to 8 grs.	197
,, ,, Syrupus	20 to 60 minims	197
,, *Iodidum*		197
,, *Lactas*		198
,, Liquor Dialysatus		200
,, Mistura Composita	1 to 2 oz.	193
,, ,, Aromatica	1 to 2 oz.	189
,, ,, *Laxans*		205
,, *Oxidum Hydratum*		201
,, ,, *Rubrum*		201
,, Perchloridi Liquor	10 to 30 minims	199
,, ,, ,, Fortior		198
,, ,, Tinctura	10 to 30 minims	199
,, *Perchloridum*		198
,, Pernitratis Liquor	10 to 40 minims	200
,, Peroxidum Hydratum	5 to 30 grs.	201
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,, Phosphas	5 to 10 grs.	201
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,, Sulphas	1 to 5 grs.	204
,, ,, Exsiccata	½ to 3 grs.	204
,, ,, Granulata	1 to 5 grs.	205
,, *Sulphatis Lotio*		205
,, Vinum	1 to 4 drms.	189
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,, *Citricum Ammoniatum*		195
,, ,, *Oxydatum Ammoniatum*		195
,, *Hydro-oxydatum Dialysatum Liquidum*		200
,, *Iodatum Saccharatum*		197
,, *Oxydatum*		200
,, ,, *Hydratum*		200
,, *Pulveratum*		189
,, Redactum	1 to 5 grs.	205
,, Tartaratum	5 to 10 grs.	206
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,, ,, *Rubræ*		354
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,, Fructus		207
,, *Oleum*		208
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,, *Suppositoria*		210
,, Tinctura	½ to 2 drms.	209
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,, ,, c. Opio		210
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,, ,, Glycerine of	10 to 60 minims	17
,, ,, *Ointment*		17
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,, *Atropine*		86
,, *Basis for Pessaries and Suppositories*		211
,, *Copying*		211
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,, ,, *Fluidum*		211
,, Tinctura	5 to 20 minims	212
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,, *Hydrochlorate of*		211
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Gentiana Lutea		212
Gentianæ Extractum	2 to 10 grs.	212
„ „ *Fluidum*		212
„ Infusum Compositum	1 to 2 oz.	212
„ *Mistura*		213
„ Radix	10 to 40 grs.	212
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„ „ Gallici	10 to 60 minims	17
„ „ Tannici	10 to 40 minims	32
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,, Extractum	3 to 6 grs.	239
,, ,, *Liquidum*		239
,, Folia		238
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,, Succus	½ to 1 drm.	239
,, Tinctura	15 to 60 minims.	239
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,, Aurantii	1 to 2 oz.	87
,, ,, Compositum	1 to 2 oz.	87
,, *Brayeræ*		174
,, Buchu	1 to 4 oz.	105
,, Calumbæ	1 to 2 oz.	117
,, Caryophylli	1 to 2 oz.	130
,, Cascarillæ	1 to 2 oz.	131
,, Catechu	1 to 2 oz.	133
,, *Chinæ frigide paratum*		150
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,, Digitalis	¼ to ½ oz.	176
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,, *Dulcamaræ*	1 to 2 oz.	177
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,, Gentianæ Compositum	1 to 2 oz.	212
,, Jaborandi	1 to 2 oz.	251
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,, *Pyrolei Pini*		318
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,, Rhei	1 to 2 oz.	350
,, Rosæ Acidum	1 to 2 oz.	354
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,, Senegæ	1 to 2 oz.	370
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,, Linimentum		248
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,, *Pigmentum*		249
,, Tinctura	5 to 20 minims	248
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,, Tinctura	30 to 60 minims	251
Jalapa	10 to 30 grs.	252
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,, Extractum	5 to 15 grs.	252
,, Pulvis Compositus	20 to 60 grs.	252
,, Resina	2 to 5 grs.	252
,, *Resinæ Tinctura*		253
,, Tinctura	½ to 2 drms.	253
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,, Spiritus	30 to 60 minims	253
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,, ,, *pro balneo*		327
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Kamala	30 to 120 grs.	254
,, *Depuratum*		254
Kamalæ Tinctura		254
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,, *Unguentum*		255
Kava-kava		255
Keratine		255
Kino	10 to 30 grs.	255
,, Pulvis Compositus	5 grs.	256
,, Tinctura	½ to 2 drms.	256
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Koso		174
Kousso		174
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,, *triandra*		256
Krameriæ Extractum	5 to 20 grs.	256
,, *Gossypium*		257
,, Infusum	1 to 2 oz.	256
,, *Ixina*		256
,, Radix	Pulv. 20 to 60 grs.	256
,, *Suppositoria*		257
,, Tinctura	½ to 2 drms.	257
,, *Trochisci*		257
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,, *Sulphuris*		399
Lachuga		257
Lactate of Iron		198
,, ,, *Morphine*		285
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,, *Homatropinæ*		85
,, Physostigminæ		311
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,, *Divinus*		172
Laranjeira Azeda		86
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,, Tinctura	20 to 30 minims	259
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Laurocerasi Aqua	20 minims to 2 drms.	259
,, Folia		259
Lavandula Vera		260
Lavandulæ Oleum	1 to 4 minims	260
,, Spiritus	30 to 60 minims	260
,, ,, *Compositus*		260
,, Tinctura Composita	½ to 2 drms.	260
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Limao		260
Limatura Ferri		189
,, ,, *Porphyrisata*		189
Lime		114
,, *Water*		112
Limonada Citratis Magnesiæ		272
,, *Citro Magnesica*		272
Limonade Purgative		272
Limonis Cortex		260
,, Oleum	1 to 4 minims	261
,, Succus	½ to 4 oz.	261
,, Syrupus	1 to 2 drms.	261
,, Tinctura	½ to 2 drms.	261
Lin		263
Linctus Boracis		104
Linho		263
Lini Cataplasma		263
,, Farina		262
,, Infusum		263
,, Oleum		263
,, Semina		263
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,, *for Freckles*		113
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,, ,, *Camphré*		363
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,, ,, *Compositum*		36
,, *Æruginis*		171
,, Ammoniæ		53
,, *Ammoniato-Camphoratum*		120
,, Belladonnæ		95
,, ,, *Compositum*		96
,, Calcis		112
,, Camphoræ		120
,, ,, Compositum		120
,, *Cantharidis*, now called Liquor Epispasticus		124
,, *Capsici. See Tinctura Capsici Fortior*		126
,, Chloroformi		143
,, *Crinale*		125
,, Crotonis		169
,, Hydrargyri		225
,, *Hyoscyami*		239
,, ,, *Compositum*		240
,, Iodi		248
,, Opii		298
,, ,, *Ammoniatum*		301
,, *Opodeldoc*		363
,, Potassii Iodidi. c. Sapone		333

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,, ,, ,, *Liquidum*		363
,, Saponis		363
,, ,, *Camphoratum*		363
,, Sinapis Compositum		375
,, *Succini*		398
,, Terebinthinæ		407
,, ,, Aceticum		408
Lino		263
Linseed		263
,, Meal		262
Lint, Boric Acid		10
,, *Carbolic*		13
,, *Eucalyptus*		184
,, *Iodoform*		246
,, *Salicylic*		29
Linteum Acidi Borici		10
Linum usitatissimum		262
Liquid Glucose		213
Liquidambar orientalis		397
Liquiritia. See Glycyrrhiza		215
Liquor Acidi Chromici		15
,, ,, *Hypochlorosi*		379
,, *Acidus Halleri*		30
,, Ammoniæ	10 to 20 minims	53
,, ,, *Fortior*		52
,, Ammonii Acetatis	2 to 6 drms.	54
,, ,, ,, Fortior	20 to 60 minims	54
,, ,, *Anisatus*		57
,, ,, *Arsenitis*		8
,, ,, Citratis	2 to 6 drms.	59
,, ,, ,, Fortior.		58
,, ,, *Iodidi*		249
,, Antimonii Chloridi		69
,, Arsenicalis	2 to 8 minims	7
,, Arsenici *Chloridi*		8
,, ,, Hydrochloricus	2 to 8 minims	8
,, Arsenii *Bromidi*		82
,, ,, et Hydrargyri Iodidi	10 to 30 minims	83
,, Atropinæ Sulphatis	1 to 4 minims	86
,, Bismuthi et Ammonii Citratis	½ to 1 drm.	99
,, *Bromi*		104
,, *Calcariæ Hypochlorosæ*		116
,, Calcii Chloridi	15 to 50 minims	111
,, ,, *Oxydati*		112
,, Calcis	½ to 2 oz.	112
,, ,, Chlorinatæ	20 to 40 minims	116
,, ,, Saccharatus	15 to 60 minims	112
,, *Cantharidis Concentratus*		125
,, *Carbonis Detergens*		317

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Liquor *Carmini*		155
,, Chlori	10 to 20 minims	141
,, *Chloroformi Compositus*		143
,, *Citratis Kalici*		331
,, Epispasticus, Blistering Liquid		124
,, Ferri Acetatis		191
,, ,, ,, Fortior		190
,, ,, *Bromidi Fortis*		192
,, ,, *Chloroxydi*		200
,, ,, Dialysatus		200
,, ,, *Hypophosphitis Fortis*		196
,, ,, *Iodidi*		197
,, ,, ,, *Fortis*		197
,, ,, *Nitratis*		201
,, ,, *Oxychlorati*		200
,, ,, *Oxydati Dialysati*		200
,, ,, Perchloridi	10 to 30 minims	199
,, ,, ,, Fortior		198
,, ,, Pernitratis		200
,, ,, Persulphatis		204
,, ,, *Phosphatis Fortis*		202
,, *Fowleri*		7
,, Gutta Percha		221
,, Hydrargyri Nitratis Acidus		228
,, ,, *Nitrici Oxydati*		229
,, ,, Perchloridi	30 to 120 minims	233
,, *Hypophosphitum Compositus*		196
,, Iodi		248
,, ,, *Compositus*		248
,, ,, *cum Kalio Iodato*		248
,, *Kali Caustici*		326
,, ,, *Hydrici*		326
,, Lithiæ Effervescens	5 to 10 oz.	266
,, Magnesii *Boratis*		10
,, ,, *Bromidi*		272
,, ,, Carbonatis	1 to 2 oz.	272
,, ,, Citratis	5 to 10 oz.	272
,, *Mercurialis Van Swieten*		233
,, *Morphiæ Bimeconatis (Squire)*		283
,, Morphinæ Acetatis	10 to 60 minims	283
,, ,, ,, *Hypodermicus*		283
,, ,, *et Atropinæ Hypodermicus*		283
,, ,, Bimeconatis		283
,, ,, Hydrochloratis	10 to 60 minims	284
,, *Natri Carbolici*		14
,, ,, *Caustici*		377
,, ,, *Hydrici*		377
,, ,, *Hypochlorosi*		379
,, *Opii Sedativus (Battley)*		300
,, *Pancreaticus*		302

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,, Plumbi *Acetici*		322
,, ,, *Diacetatis*		322
,, ,, Subacetatis		322
,, ,, ,, Dilutus		323
,, ,, *Subacetici*		322
,, Potassæ	15 to 60 minims	325
,, ,, *Arsenitis. See* Liquor Arsenicalis		7
,, ,, (*Brandish*)		326
,, ,, *Citratis*		331
,, ,, Effervescens	5 to 10 oz.	328
,, Potassii *Arseniatis et Bromidi*		82
,, ,, Permanganatis	¼ to ½ oz.	335
,, Sodæ	½ to 1 drm.	377
,, ,, Chlorinatæ	10 to 20 minims	378
,, ,, Effervescens		381
,, Sodii Arseniatis	5 to 10 minims	380
,, ,, Ethylatis		384
,, ,, *Sulphitis Benzoicus*		388
,, Strychninæ Hydrochloratis	4 to 10 minims	397
,, *Sublimati Corrosivi* (*Van Swieten*)		233
,, *Thymolis*		410
,, *Volatilis Cornu-cervi*		57
,, Zinci Chloridi		422
Liquores (*group*)		264
Liquorice *Indian*		1
,, *Jamaica*		1
,, Root		215
Lirio de los Valles		162
Litargirio		321
Lithargyri Cremor		323
Lithargyrum		321
Lithiæ Liquor Effervescens	5 to 10 oz.	266
Lithii *Benzoas*		265
,, *Bromidum*		265
,, Carbonas	3 to 6 grs.	266
,, Citras	5 to 10 grs.	266
,, *Guaiacas*		267
,, *Salicylas*		267
Lithium		265
Lobelia		267
,, *inflata*		267
Lobeliæ Tinctura	10 to 30 minims	268
,, ,, Ætherea	10 to 30 minims	268
Lobeline		267
Logwood		222
Losna		1
Lotio *Acidi Carbolici*		13
,, *Ammonii Chloridi*		58

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Lotio *Benzoini*		97
,, *Bismuthi*		102
,, *Boracis*		104
,, *Crinalis*		54
,, *Ferri Sulphatis*		205
,, Hydrargyri Flava		233
,, ,, Nigra		235
,, *Plumbi Acetatis*		320
,, *Resorcini*		348
,, *Rubra*		2
,, *Stimulans*		125
,, *Sulphuris*		399
,, *Zinci Acetatis*		421
,, ,, *Chloridi*		422
,, ,, *Oxidi*		110
,, ,, *Sulphatis*		424
Lotion à l'Acétate de Plomb		323
,, *dite de Goulard*		323
Lozenges (*group*). *See* Trochisci		413
Loureiro-cerejeira		259
Lugol's Solution		248
Lunar Caustic		78
Lupuli Extractum	5 to 10 grs.	269
,, Infusum	1 to 2 oz.	269
,, Tinctura	½ to 2 drms.	269
Lupulin		268
Lupulini Extractum		268
,, *Oleo-resina*		268
,, *Tinctura*		268
Lupulinum	2 to 5 grs.	268
Lupulus		269
Mace, Oil of		288
Magistery of Bismuth		101
Magnesia *Carbonica*		271
,, *Fluid*		272
,, Levis . . Antacid, 10 to 20 grs.	Purgative, 20 to 60 grs.	270
,, Ponderosa . Antacid, 10 to 20 grs.	Purgative, 20 to 60 grs.	270
,, *Sulpho-carbolate of*		14
Magnesiæ Mistura c. Rheo		272
Magnesii *Boratis Liquor*		10
,, *Bromidi*		272
,, Carbonas Levis	10 to 60 grs.	271
,, ,, Ponderosa	10 to 60 grs.	271
,, Carbonatis Liquor	1 to 2 oz.	272
,, Citratis Liquor	5 to 10 oz.	272
,, *Salicylas*		273
,, Sulphas	1 to 4 drms.	273
,, Sulphatis Enema		273
,, *Sulphis*		273
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,, *Oil of* 207
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,, *Extract* 106
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,, Oxidum Nigrum 274
,, ,, *Præparatum* 274
,, *Phosphas* 274
,, *Sulphas* 274
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,, *Depurata* 275
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,, *Comun* 67
Maranta 275
,, *arundinacea* 275
Marble, White 275
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Marmelo 174
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,, *Ferri Carbonatis* 194
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Mentha Arvensis		278
,, *Piperita*		277
,, *Viridis*		278
Menthæ *Crispæ Oleum*	1 to 2 oz.	278
,, Piperitæ Aqua		277
,, ,, Essentia	10 to 20 minims	277
,, ,, Oleum	1 to 4 minims	277
,, ,, Spiritus	30 to 60 minims	277
,, Viridis Aqua	1 to 2 oz.	278
,, ,, Oleum	1 to 4 minims	278
Menthol		278
Mentholeate		279
Menyanthes		279
,, *Trifoliata*		279
Menyanthidis Extractum		279
Mercurio com Carbonato de Cal		237
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,, with Chalk		237
,, *Plaster Mull*		226
,, *and Carbolic Plaster Mull*		226
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,, *Salicylate of*		28, 210
Methylacetanilide		185
Methylal		279
Methylated Ether		39, 41
Methyl—Benzoyl		3
Methylene		144
,, *Bichloride*		144
Methylic Alcohol		44
,, *Ether*		44
Methylphenylacetone		3
Mezerei Cortex		279
,, Extractum Æthereum		280
,, *Unguentum*		280
Mezereon Bark		279
Mézéréon		279
Mica Panis		280
,, ,, *Cataplasma*		280
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,, *Artificial Human*		257
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,, ,, *drunk at table*		480
,, ,, *Foreign*		442
,, ,, ,, *Imported*		477
Mistura *Acidi Carbolici*		13
,, *Alba*		272
,, Ammoniaci	½ to 1 oz.	51
,, ,, *Composita.*		51
,, Amygdalæ	1 to 2 oz.	61
,, ,, *Amaræ*		60
,, *Camphoræ. See* Aqua Camphoræ		119
,, *Camphorata*		119
,, *Cetacei*		137
,, *Colchici*		157
,, *Copaibæ*		164
,, Creasoti	1 to 2 oz.	166
,, ,, *c. Opio*		166
,, Cretæ	1 to 2 oz.	167
,, *Croton-Chloral*		106
,, Ferri Aromatica	1 to 2 oz.	189
,, ,, Composita	1 to 2 oz.	193
,, ,, *Laxans*		205
,, ,, *et Quiniæ Effervescens*		196
,, *Gentianæ*		213
,, Guaiaci	½ to 2 oz.	219
,, *Magnesiæ c. Rheo*		272
,, *Moschi*		287
,, *Olei Santali*		361
,, Scammonii	Infant, ½ to 1 oz. Adult, 1 to 2 oz.	367
,, Sennæ Composita	1 to 1½ oz.	372
,, Spiritus Vini Gallici	1 to 2 oz.	392
,, *Sulphurica Acida*		30
Misturæ (*group*)		280
Mixtura Saleb		359
Mixture for Whooping Cough		130
Mollin		365
Monobromated Camphor		121
Mori Succus		280
,, Syrupus	1 to 2 drms.	281
Morphina		281
Morphinæ Acetas	⅛ to ½ gr.	281
,, Acetatis Liquor	10 to 60 minims	283
,, ,, ,, *Hypodermicus*		283
,, *et Atropinæ Liquor Hypodermicus*		283
,, Bimeconatis Liquor	5 to 40 minims	283
,, Hydrochloras	⅛ to ½ gr.	283
,, Hydrochloratis Liquor	10 to 60 minims	284
,, Injectio Hypodermica	1 to 5 minims	282
,, *Lactas*		285
,, *Oleas*		281

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Morphinæ Sulphas		285
,, Suppositoria		284
,, ,, c. Sapone		285
,, *Tartras*		285
,, Trochisci	1 or 2 loz.	285
,, ,, et Ipecac.	1 or 2 loz.	285
Morrhuæ Oleum	1 to 4 drms.	286
Morrhuol		287
Morton's Iodo-Glycerine Solution		248
Morus Nigra		280
Moschi Mistura		287
,, *Tinctura*		287
Moschus	5 to 10 grs.	287
,, *Moschiferus*		287
Moss, Iceland		137
,, *Irish*		138
Mostarde		374
Mostasa		374
Mountain Damson		374
Moutarde		374
Mouth and Nose Protector (for poisonous and injurious trades)		217
Mucilage de Gomme Adragante		413
Mucilagines (*group*)		287
Mucilago Acaciæ		2
,, Amyli		64
,, *Cydonii*		174
,, *Salep*		359
,, Tragacanthæ		412
Muguet		162
Mulberry Juice		280
Muriate of Ammonia. See Ammonii Chloridum		58
,, *Morphia*		283
Muriatic Acid		19
Musc		287
Muscade		288
Musk		287
,, *Root. See* Sumbul		401
Mustard		374
,, Paper		375
Mynsicht's Elixir of Vitriol		30
Myristica	5 to 15 grs.	288
,, *fragrans*		288
Myristicæ *Adeps*		288
,, Oleum	1 to 4 minims	288
,, ,, Expressum		288
,, Spiritus	30 to 60 minims	288
Myroxylon Pereiræ		90
,, *Toluifera*		91
Myrrh		288
Myrrha	10 to 30 grs.	288

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Naphthalene . . . 289
Naphthalini Pulvis . . . 289
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Naphthol . . . 290
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,, *Hydro-oxydatum Solutum* . . . 377
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,, ,, *Siccum* . . . 387
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,, ,, Ammonium		59
,, ,, *Bismuth*		100
,, ,, Copper		171
,, ,, Lead		321
,, ,, Pilocarpine		312
,, ,, Potassium		334
,, ,, Silver		78
,, ,, ,, *Black Stains, to remove*		79
,, ,, ,, *Caustic Points*		80
,, ,, ,, Toughened		79
,, ,, Sodium		385
,, ,, *Zinc*		423
Nitrato Mercurico Acido		229
,, *Potasico*		334
Nitre		334
Nitric Acid		23
,, ,, Diluted		23
Nitris Æthylicus cum spiritu		391
Nitrite of Amyl		62
,, ,, ,, *Tertiary*		63
,, ,, *Sodium, Pure*		386
Nitro-Glycerine		291
Nitro-Glycerini Tabellæ	1 to 2 tablets	291
Nitro-Hydrochloric Acid, Diluted		24
,, ,, *Bath*		24
Nitrous Oxide Gas		59
Noix Vomique		291
Noz Moschada		288
,, *Vomica*		291
Nucis Vomicæ Extractum	$\frac{1}{4}$ to 1 gr.	292
,, ,, Tinctura	10 to 20 minims	292
Nuez Moscada		288
,, *Vomica*		291
Nutmeg		288
Nux *Moschata*		288
,, Vomica	1 to 3 grs.	291
Oak Bark		341
Oil for Catheters		13
Oil of *Amber*		398
,, Anise	1 to 4 minims	66
,, *Birch*		28, 210
,, *Cade*		254
,, Cajuput		109
,, *Canada Fleabane*		182
,, *Cassia*		152
,, Dill	1 to 4 minims	65
,, *Dugong*		177
,, Eucalyptus		183

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Oil of *Grey*		226
,, Juniper		253
,, Lavender		260
,, Lemon	1 to 4 minims	261
,, *Mace*		288
,, *Male Fern*		207
,, Peppermint		277
,, Rosemary		355
,, Rue		356
,, Sandalwood		360
,, Spearmint		278
,, Theobroma		408
,, Turpentine		406
,, *Vitriol. See* Acid Sulphuric		29
,, *Wintergreen*		210
Oils (*group*)		293
Ointments (*group*)		414
Olea (*group*)		293
,, *Europæa*		294
Oleate *of Aconitine*		38
,, ,, *Aluminium*		49
,, ,, *Atropine*		85
,, ,, *Bismuth*		100
,, ,, *Copper*		172
,, ,, *Lead*		322
,, ,, Mercury		230
,, ,, ,, *and Morphine*		230
,, ,, *Morphine*		281
,, ,, *Sodium Solution*		423
,, ,, *Veratrine*		418
,, ,, Zinc		423
Oleates		294
Oleatum *Aconitinæ*		38
,, *Atropinæ*		85
,, Hydrargyri		230
,, ,, *cum Morphia*		230
,, Zinci		423
Oleic Acid		24
Oleo. See Olea		293
,, *de Ambar*		398
,, ,, *Cacao*		408
,, ,, *Linhaça*		263
,, ,, *Noz Moschada*		288
,, ,, *Ricino*		352
Oleo-resina *Aspidii*		207
,, *Capsici*		126
,, Cubebæ	5 to 30 minims	170
,, *Lupulini*		268
,, *Piperis*		316
,, *Zingiberis*		426

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Oleum Amygdalæ	2 to 4 drms.	61
,, ,, *Amaræ*		61
,, Anethi	1 to 4 minims	65
,, Anisi	1 to 4 minims	66
,, Anthemidis	1 to 4 minims	68
,, *Anthos*		355
,, *Aurantii Corticis*		88
,, ,, *Florum*		89
,, *Balsami Copaivæ*		164
,, *Betulæ Albæ*		97
,, *Cacao*		408
,, *Cadinum*		254
,, Cajuputi	1 to 3 minims	109
,, *Camphoratum*		120
,, *Cardamomi*		129
,, Carui	2 to 4 minims	130
,, Caryophylli	1 to 4 minims	130
,, *Cassiæ*		152
,, *Chamomillæ Citratum*		68
,, ,, *Infusum*		68
,, *Cinereum*		226
,, Cinnamomi	1 to 4 minims	151
,, *Citri*		261
,, Copaibæ	5 to 20 minims	163
,, Coriandri	1 to 4 minims	164
,, Crotonis	$\frac{1}{3}$ to 1 minim	168
,, Cubebæ	5 to 20 minims	170
,, *Erigerontis Canadensis*		182
,, *Fœniculi*		208
,, *Gaultheriæ*		210
,, *Gynocardiæ*		221
,, *Homatropinæ cum Cocaina*		85
,, *Jecoris Aselli*		86
,, Juniperi	1 to 3 minims	253
,, ,, *Empyreumaticum*		254
,, Lavandulæ	1 to 4 minims	260
,, Limonis	1 to 4 minims	261
,, Lini		263
,, ,, *Lotum*		263
,, *Macidis*		288
,, Menthæ *Crispæ*		278
,, ,, Piperitæ	1 to 4 minims	277
,, ,, Viridis	1 to 4 minims	278
,, Morrhuæ	1 to 4 drms.	286
,, Myristicæ	1 to 4 minims	288
,, ,, *Æthereum*		288
,, ,, Expressum		288
,, *Neroli*		89
,, *Nucistæ*		288
,, Olivæ	$\frac{1}{2}$ to 1 oz.	294

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OL to OP	Dose.	Page
Oleum *Petroselini*		74
,, Phosphoratum	5 to 10 minims	309
,, Pimentæ	1 to 3 minims	34
,, Pini *Foliorum*		315
,, ,, *Pumilionis*		315
,, ,, Sylvestris		314
,, Ricini	Infant, 1 to 3 drms. Adult, ½ to 1 oz.	352
,, Rosmarini	1 to 5 minims	355
,, Rutæ	1 to 4 minims	356
,, Sabinæ	1 to 5 minims	356
,, Santali *Flavi*		360
,, ,,		360
,, Sinapis		375
,, ,, *Æthereum*		375
,, ,, *Volatile*		375
,, *Staphisagriæ*		395
,, *Succini Empyreumaticum*		398
,, ,, *Rectificatum*		398
,, Terebinthinæ	10 to 30 minims. Anthelm. 2 to 4 drms.	406
,, Theobromatis		408
,, *Tiglii*		168
,, *Valerianæ*		417
Olivæ Oleum	½ to 1 oz.	294
Olive Oil		294
Olmo		414
Onguent d'Arcæus		179
,, *Basilicum*		347
Ophelia Chirata		138
Opii *Aqua*		300
,, Confectio	5 to 20 grs.	297
,, Emplastrum		297
,, Enema		297
,, Extractum	½ to 1 gr.	297
,, ,, Liquidum	10 to 40 minims	298
,, Linimentum		298
,, ,, *Ammoniatum*		301
,, *Liquor Sedativus*		300
,, *Pilula*, now Pil. Sapon. Compositus		299
,, Pulvis Compositus	2 to 5 grs.	299
,, Tinctura	5 to 30 minims	298
,, ,, Ammoniata	½ to 1 drm.	299
,, Trochisci	1 or 2 loz.	299
,, *Unguentum*		300
,, Vinum	10 to 40 minims	299
,, ,, *without Aromatics*		299
Opium	½ to 2 grs.	295
,, *Group of Preparations, with Proportions*		299
,, *Therapeutical Equivalents of*		284
Opodeldoc. See Linimentum Saponis		364
,, *Arnica*		82

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OP to OX	Dose.	Page
Opodeldoc Iodatum		333
,, *Liquidum*		364
Opuntia Cochinillifera		154
Orange, preparations of		86—89
Orchis Moris		359
Orge Perlé		224
Orme Champêtre		414
,, *Fauve.*		414
Oryza Sativa		63
Os Ustum		301
Osmate of Potassium		25
Osmic Acid		25
Osmium, Tetroxide of		25
Otto of Rose		355
Ovi Albumen		301
,, Vitellus		301
Ovis Aries		373
Ox bile purified		188
Oxalas Cerosus		136
,, ,, *Venalis*		136
Oxalate of Cerium		135
Oxalato de Cerio		136
Oxide of Antimony		70
,, ,, Bismuth		101
,, ,, ,, *Hydrated*		101
,, ,, *Ethyl*		40
,, ,, Silver		80
,, ,, Zinc		423
,, ,, ,, *Soap*		364
Oxido Mercurico Amarillo		231
,, ,, *Rojo*		231
Oxidum Stibicum		70
Oxyde de Fer Bihydraté		201
,, *Mercurique Jaune*		231
,, ,, *Rouge*		231
,, *(Proto) de Plomb Fondu*		321
Oxydo de Chumbo		321
,, *Ferrico Carbonatado*		201
,, *Mercurico*		231
Oxydum Hydrargyri Flavum		231
,, ,, *Rubrum*		231
,, *Hydrargyrieum*		231
,, ,, *Flavum*		231
,, ,, *Præcipitatum*		231
,, *Magnesicum Ponderosum*		271
,, *Plumbicum*		321
,, ,, *Semivitreum*		321
Oxymel	1 to 2 drms.	277
,, Scillæ	½ to 1 drm.	368
Oxynitrate of Bismuth		101

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PA	Dose.	Page
Pale Catechu		132
Panama Wood		342
Pancreatic Diastase		301
,, *Emulsion*		303
,, *Enzymes*		301
Pancreaticus Liquor		302
Pancreatized Fat		303
Papain		303
Paparraz		394
Papaver Rhœas		352
,, *somniferum*		295, 303
Papaverina		296
Papaveris Capsulæ		303
,, Decoctum		304
,, ,, *Concentratum*		304
,, Extractum	2 to 5 grs.	304
,, ,, *Liquidum*		304
,, Syrupus	1 drm.	304
Papaw Juice		303
Papayotin		303
Papel Sinapico		375
Papier Épispastique		124
Para-acetphenetidin		308
Paraffin Wax		304
Paraffinum Durum		304
,, *Liquidum*		306
,, Molle		305
Paraldehyde.		306
Paregoric Elixir		120
,, *Scotch*		299
Pareiræ Decoctum	1 to 2 oz.	307
,, Extractum	10 to 30 grs.	307
,, ,, Liquidum	½ to 2 drms.	307
,, Radix	30 to 60 grs.	306
Parrish's Chemical Food		203
Pasta Abri		1
,, *Amyli Iodidi*		65
,, *Caustica*		326
,, *Copaibæ*		164
,, *Zinci Chloridi*		422
,, ,, ,, *cum Opio*		422
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,, ,, *for Dentists*		8
Pastilles, Codeine		155
,, *Schuster's*		33
Pastillus Acidi Borici		10
,, *Cetrariæ*		138
Paullinia Sorbilis		220
Pavot		303
Pavy's Solution		173

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Pearl Barley . . . 224
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,, *Solution* . . . 380
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Pelosine . . . 290
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Pepinos de S. Gregorio . . . 177
Pepper, Black . . . 315
,, *Guinea* . . . 125
,, *Pod* . . . 125
Peppermint, Oil of . . . 277
Pepsine . . . 2 to 5 grs. . . . 307
,, *de Boudault* . . . 308
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Peptonised Beef Tea . . . 302
,, *Gruel* . . . 302
,, *Milk* . . . 302
,, *Milk-gruel* . . . 302
,, *Nutritive Enemata* . . . 302
Percha Lamellata . . . 221
Perchloride of *Iron* . . . 198
,, ,, Mercury . . . 232
Percolation, instructions for . . . 412
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,, *Potassæ* . . . 335
Permanganate of Potassium . . . 335
,, *de Potasse* . . . 335
,, of Zinc . . . 424
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,, *Potasico* . . . 335
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,, ,, Iron . . . 201
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Pessary Basis . . . 211, 408
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,, *Plumbi Iodidi et Atropiæ* . . . 321
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,, *Rosæ* . . . 353, 354
,, ,, Centifoliæ . . . 353
,, ,, Gallicæ . . . 354
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Pez de Borgonha		316
,, *Louro*		347
Phenacetin		308
Phenic Acid		10
,, *Alcohol*		10
Phenol		10
,, *Camphor*		14
,, *Iodatum*		14
Phenylacetamide		68
Phosphas Calcicus		114
,, *Natricus*		386
,, *Sodæ*		386
Phosphate of Ammonium	5 to 20 grs.	59
,, ,, *Berberine*		97
,, ,, Calcium		114
,, *de Chaux*		114
,, *of Codeine*		155
,, ,, Iron		201
,, ,, *Lime*		114
,, ,, *Manganese*		274
,, ,, *Quinine*		346
,, ,, Sodium		386
,, *de Soude*		386
Phosphato de Cal		114
,, ,, *Soda*		386
Phosphide of Zinc		424
Phosphoratum Oleum		309
Phosphori *Elixir*		310
,, Pilula		309
,, ,, *c. Sævo*		310
,, *Tinctura Composita*		310
Phosphoric Acid, Concentrated		25
,, ,, Diluted	10 to 30 minims	26
,, ,, *Glacial*		27
Phosphorus		309
,, Oil	5 to 10 minims	309
,, Pill	2 to 4 grs.	309
Phosphure de Zinc		424
Photoxylin		340
Physalis Alkakengi		310
,, *Tinctura*		310
Physeter Macrocephalus		136
Physostigma Venenosum		310
Physostigmatis Extractum	$\frac{1}{16}$ to $\frac{1}{4}$ gr.	311
,, Semen	1 to 4 grs.	310
,, *Tinctura*	10 minims	311
Physostigmina		311
Physostigminæ *Guttæ*		312
,, ,, *cum Cocaina*		312

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,, *Hydrobromas* 311
,, Lamellæ 311
,, *Salicylas* 312
,, *Sulphas* 312
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,, *Radix* 312
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,, *Capsulæ* 318
,, Emplastrum 316
,, *Liquidæ Pigmentum* 318
,, ,, *Syrupus* 318
,, ,, Unguentum 317
,, *Pigmentum cum Iodo* 249
,, *Pilulæ* 318
,, *Unguentum Molle* 317
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Picric Acid 27
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,, *Iodi* 249
,, *Picis cum Iodo* 249
,, ,, *Liquidum* 318
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,, *Ferruginosas de Vallet* 194
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,, *Hydrochloras* 313
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,, Nitratis *Injectio* 313
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,, Nitrate of 312
Pilocarpus Pinnatifolius 251
Pilulæ (*group*) 313
,, Aloes Barbadensis — 5 to 10 grs. — 45
,, ,, *diluta. See* Pil. Aloes Barbadensis 45
,, ,, et Asafœtidæ — 5 to 10 grs. — 47
,, ,, ,, Ferri — 5 to 10 grs. — 45
,, ,, ,, Myrrhæ — 5 to 10 grs. — 47
,, ,, Socotrinæ — 5 to 10 grs. — 47
,, *Aloinæ Composita.* 48
,, *Alterantes Plummeri* 235
,, *Antimonii Comp. See* Pil. Hydrarg. Subchloridi Comp. 235
,, Asafœtidæ Composita — 5 to 10 grs. — 84
,, *Asiatica* 8
,, *Blaud* 194

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PI

	Dose.	Page
Pilula *Butyl-Chloral*		106
,, *Calomelanos Composita. See* Pil. Hydrarg. Subchloridi Comp.		235
,, Cambogiæ Composita	5 to 10 grs.	118
,, *Catharticæ Composita*		118
,, Colocynthidis Composita	5 to 10 grs.	159
,, ,, et Hyoscyami	5 to 10 grs.	160
,, Conii Composita	5 to 10 grs.	161
,, *Copaibæ*		164
,, *Croton Chloral*		106
,, *Digitalis Composita*		176
,, *Elaterii*		178
,, *Ferratæ Blaudii*		194
,, ,, *Valleti*		194
,, Ferri *Blaud*		194
,, ,, Carbonatis	5 to 20 grs.	194
,, ,, *Carbonici*		194
,, ,, *Compositæ*		194
,, ,, Iodidi	3 to 8 grs.	197
,, *Fœtida Succinata*		84
,, *Fulleri*		47
,, *Galbani Composita. See* Pil. Asaf. Co.		84, 209
,, *Hœnii*		367
,, Hydrargyri	Alterative, 3 to 8 grs. Purgative, 10 grs.	226
,, ,, *Carbolici*		233
,, ,, *Iodidi Viridis*		228
,, ,, Subchloridi Composita.	5 to 10 grs.	235
,, ,, ,, *c. Colocynth*		235
,, ,, ,, *c. Jalapâ*		235
,, ,, ,, *c. Scammonio*		235
,, *Hydrargyricæ*		226
,, Ipecacuanhæ c. Scillâ	5 to 10 grs.	249
,, *Mercuriales Cœruleæ*		226
,, *Myrrhæ Ferratæ*		194
,, *Opii Comp. See* Pil. Saponis Composita		298
,, Phosphori	2 to 4 grs.	309
,, ,, *c. Sævo*		310
,, *Picis*		318
,, Plumbi c. Opio	4 grs.	319
,, *Plummeri. See* Pil. Hyd. Subchl. Co.		235
,, Rhei Composita	5 to 10 grs.	351
,, *Rufi*		47
,, Saponis Composita	3 to 5 grs.	298
,, Scammonii Composita	5 to 15 grs.	367
,, Scillæ Composita	5 to 10 grs.	368
,, *Terebinthinæ Chiæ*		406
,, *Vallet*		194
Pilulas de Aloes e Gomma Guta		118
,, ,, *Carbonato Ferroso*		194
,, *Mercurials*		226
Pilule Anderson		118

PI to PL	Dose.	Page
Pilule de Carbonate Ferreux		194
Pilules de Bontius		118
,, *Ferrugineuses de Blaud*		194
,, *Mercurielles Simples*		226
Pimenta	10 to 30 grs.	314
Pimenta (Port)		315
,, *de Jamaica*		314
,, *Officinalis*		314
Pimentæ Aqua	1 to 2 oz.	314
,, Oleum	1 to 3 minims	314
Pimentao		125
Pimento		314
Pimienta de la Jamaica		314
Pimisuta Nigra		315
Pimpinella Anisum		65
Pini *Pumilionis Extractum*		314
,, ,, *Oleum*		314
,, Sylvestris Olei Vapor		315
,, ,, Oleum		315
Pinites Succinifer		398
Pinus Australis		406
,, *Balsamea*		406
,, *Larix*		258
,, *Maritima*		317, 407
,, *Picea*		316
,, *Pinaster*		406
,, *Pumilio*		314, 407
,, *Sylvestris*		315, 317, 406
,, *Tæda*		406
Piper *Angustifolium*		276
,, *Cubeba*		169
,, *Methysticum*		255
,, Nigrum	5 to 20 grs.	315
Piperina		316
Piperis Confectio	60 to 120 grs.	315
,, *Oleo-resina*		316
Piscidia erythrina		316
Piscidiæ Extractum Liquidum		316
Pissenlit		405
Pistacia Lentiscus		275
,, *Terebinthus*		406
Pitch *Black*		318
,, Burgundy		316
Pix Burgundica		316
,, *Carbonis Liquida Præparata*		317
,, Liquida		317
Plasma. See Glycerinum Amyli		64
Plaster of Paris		114
Plaster Mull Acid Pyrogallic		27
,, ,, *Chrysarobin*		145

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PL to PO	Dose.	Page
Plaster Mull Iodide of Lead		321
,, ,, *Mercury*		226
,, ,, ,, *and Carbolic*		226
,, ,, *Resorcin*		348
,, ,, *Salicylic and Creasote*		29
,, ,, *Zinc Oxide*		423
,, ,, ,, *and Salicylic*		424
Plaster Mulls (*Unna*)		221
Plasters (*group*)		179
Plumbi Acetas	1 to 4 grs.	318
,, Acetatis *Lotio*		320
,, ,, Unguentum		319
,, Carbonas		320
,, Carbonatis Unguentum		320
,, Emplastrum		321
,, Iodidi Emplastrum		321
,, ,, *Pessus*		321
,, ,, Unguentum		321
,, Iodidum		320
,, Nitras		321
,, *Oleas*		322
,, Oxidum		320
,, Pilula c. Opio	4 grs.	319
,, Subacetatis Glycerini Unguentum		323
,, ,, Glycerinum		323
,, ,, Liquor		322
,, ,, ,, Dilutus		323
,, Suppositoria Composita		319
Plumbum		318
,, *Aceticum*		319
,, ,, *Basicum Solutum*		322
,, ,, *Depuratum*		319
,, *Carbonicum*		320
,, *Iodatum*		320
,, *Oxydatum*		321
Plummer's Pill		235
Pó de Canella Composto		152
,, *Escamonea Composto*		367
,, *Ipecacuanha Composto*		250
Pocion de Citrato Magnesico Gaseosa		272
Podophylli Resina	$\frac{1}{6}$ to 2 grs.	324
,, Rhizoma	10 to 20 grs.	323
,, Tinctura	15 to 30 minims	324
,, ,, *Ammoniata*		324
Pod Pepper		125
Poivre Noir		315
,, *de Guinée*		125
Poix de Bourgogne		316
Poix-resine		347
Poke Root		312

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	Dose.	Page
Poligala		370
Polvo de Ipecacuana Opiado		250
,, ,, *Magnesia con Ruibarbo*		351
Polygala Senega		370
,, *de Virginie*		370
Pomada de Aconitina		37
,, ,, *Belladonna*		96
,, ,, *Cloruro Mercurioso*		235
,, *Estibiada*		72
,, *de Iodeto de Potassio Iodada*		248
,, ,, *Ioduro Potasico Iodado*		248
,, *Mercurial Doble*		226
,, ,, *Simple*		226
,, ,, *Terciada*		226
,, *de Mercurio Doce*		235
Pomegranate Root Bark		217
Pommade avec l'Oxyde Jaune de Mercure		231
,, *de Belladone*		96
,, ,, *Carbonate de Plomb*		320
,, ,, *Clorure Mercureux.*		235
,, *Epispastique Jaune*		125
,, ,, *Verte*		125
,, *de Goudron*		317
,, *d'Iodure de Potassium Iodurée*		248
,, *Mercurielle Faible*		226
,, *Stibiée*		72
,, *de Soufre*		400
Poppy Capsules		303
,, Petals, Red		352
Porcelain Clay		254
Potassa Caustica		325
,, ,, *Fusa*		325
,, ,, *por la Cal*		325
,, ,, *Soluta*		326
,, *cum Calce*		326
,, *Sulfurada*		327
,, Sulphurata	3 to 8 grs.	326
Potassæ Bitartras. *See* Potassæ Tartras Acida		336
,, Liquor		325
,, ,, Effervescens	5 to 10 oz.	328
,, Sulphuratæ Unguentum		327
Potasse Caustique à l'Alcool		325
,, ,, *à la Chaux*		325
Potassii Acetas	10 to 20 grs.	327
,, *Benzoas*		328
,, Bicarbonas	10 to 20 grs.	328
,, Bichromas		328
,, Bromidum	20 to 60 grs.	329
,, Carbonas	10 to 30 grs.	329
,, Chloras	10 to 20 grs.	330

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PO to PR	Dose.	Page
Potassii Chloratis *Gargarisma*		331
,, ,, Trochisci. 5 grs. in each.	1 to 6 loz.	331
,, Citras	20 to 60 grs.	331
,, Cyanidum		331
,, Ferrocyanidum		332
,, Iodidi Linimentum c. Sapone		333
,, ,, Unguentum		333
,, Iodidum	2 to 10 grs.	332
,, Nitras	5 to 20 grs.	334
,, *Osmias*		25
,, Permanganas	1 to 2 grs.	335
,, Permanganatis Liquor	2 to 4 drms.	335
,, *et Sodii Tartras*		378
,, Sulphas	10 to 20 grs.	335
,, *Sulphis*		336
,, *Sulphocarbolas*		14
,, Tartras	Alterative, 20 to 60 grs. Purgative, 120 to 200 grs.	336
,, ,, Acida.	Diuretic, 20 to 60 grs. Aperient, 60 to 120 grs.	336
Potassium		324
Potio Magnesiæ Citricæ Effervescens		272
,, *Riverii*		331
Potion Gommeuse		3
,, *Gazeuse*		331
Poudre d'Ipecacuanha Opiacée		250
Powders (*group*)		338
Præcipitatum Album		236
Precipitated Carbonate of Calcium		110
,, ,, *Lime*		110
,, Sulphur		389
Précipité Blanc		236
Prepared Chalk		165
,, *Coal Tar*		317
,, Lard		38
,, *Sulphuret of Antimony*		70
Preservative Fluid, Heger's		29
Proof Spirit		392
Protochlorure de Mercure par volatilisation		234
Proto-Ioduretum Hydrargyri		228
Prune		337
Pruni Virginianæ Cortex		337
,, ,, *Syrupus*		337, 338
,, ,, *Tinctura*		337
Prunier Commun		337
Prunum		337
Prunus Amygdalus		60, 61
,, *Domestica*		337
,, *Laurocerasus*		259
,, *Serotina*		337
Prussiate of Potash, Yellow		332
Prussic Acid		20

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Pseudaconine		36
Pseudaconitine		36, 37
Pterocarpi Lignum		338
Pterocarpus Marsupium		255
,, *Santalinus*		338
Pulpa Prunorum		337
Pulpe de Casse		131
Pulsatilla		338
Pulveres (*group*)		338
Pulvis Amygdalæ Compositus	60 to 120 grs.	62
,, Antimonialis	2 to 6 grs.	70
,, *Aromaticus. See* Pulv. Cinnam. Comp.		152
,, Catechu Compositus	20 to 40 grs.	133
,, Cinnamomi Compositus	3 to 10 grs.	152
,, Cretæ Aromaticus	10 to 60 grs.	167
,, ,, ,, c. Opio	10 to 40 grs.	168
,, *Doveri*		250
,, Elaterini Compositus	½ to 5 grs.	179
,, Glycyrrhizæ Compositus	1 drm.	216
,, Ipecacuanhæ Compositus	5 to 10 grs.	250
,, ,, *Opiatus*		250
,, ,, *c. Opio*		250
,, ,, *et Opii*		250
,, ,, *Thebaicus*		250
,, Jalapæ Compositus	20 to 60 grs.	252
,, Kino Compositus	5 grs.	256
,, ,, *c. Opio*		256
,, *Liquiritiæ Compositus*		216
,, *Magnesiæ c. Rheo*		351
,, Opii Compositus	2 to 5 grs.	298
,, *Opii Compositus (Dutch)*		250
,, *Pectoralis Kurellæ*		216
,, Rhei Compositus	30 to 60 grs.	351
,, *Salicylicus cum Talco*		29
,, *Salinus Anticholeraicus*		381
,, Scammonii Compositus	10 to 20 grs.	367
,, *Sodii Sulphatis et Zingiberis*		388
,, *Stramonii Compositus*		396
,, Tragacanthæ Compositus	10 to 60 grs.	413
,, *Zinci Chloridi Compositus*		422
Punica Granatum		217
Pure Ether		40
Purified Animal Charcoal		127
,, Black Antimony		70
,, Ox Bile		188
Pyrethre Officinal		339
Pyrethri *Flores*		339
,, *Florum Tinctura*		339
,, Radix		339
,, Tinctura		339
,, *Trochisci*		339

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,, Lignum		340
,, Tinctura	1 to 2 drms.	341
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,, *Plaster Mull*		348
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,, ,, ,, Liquidum		348
,, Purshiani Cortex		349
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Rhei Extractum	3 to 6 grs. Br. Ph. dose 5 to 20 grs.	305
,, ,, *Compositum*		352
,, Infusum	1 to 2 oz.	350
,, Pilula Composita	5 to 10 grs.	351
,, Pulvis Compositus	$\frac{1}{2}$ to 1 drm. 5 to 10 grs. for a child.	351
,, Radix	5 to 20 grs.	350
,, Syrupus	1 to 4 drms.	351
,, Tinctura	1 to 2 drms.	351
,, Vinum	1 to 2 drms.	351
Rheum Officinale		350
,, *Palmatum*		350
,, *Ponticum*		350
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Rhœados Petala		352
,, Syrupus	1 to 2 drms.	352
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,, *Damascena*		355
,, *Gallica*		354
,, *Pallida*		353
,, *Rubra*		354
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,, Caninæ Fructus		353

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,, Centifoliæ Petala		353
,, Gallicæ Confectio	½ to 1 drm.	354
,, ,, Petala		354
,, ,, Syrupus		354
,, Infusum Acidum	1 to 2 oz.	364
,, ,, *c. Acido Nitrico*		355
,, *Oleum*		355
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,, *Rubras*		354
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,, *Rouge*		354
Rosmarini Oleum	1 to 5 minims	355
,, Spiritus	30 to 60 minims	355
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Ruibarbo		350
Rumicin		429
Ruta graveolens		356
Rutæ *Confectio*		356
,, *Enema*		356
,, Oleum	1 to 4 minims	356
,, *Syrupus*		356
Sabadilla	4 to 6 grs.	356
Sabao Animal		362
,, *Vegetal*		363
Sabinæ Cacumina	5 to 10 grs. powder	356
,, Oleum	1 to 5 minims	356
,, Tinctura	15 to 60 minims	357
,, Unguentum		357
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,, Solution of Lime		112
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,, *Tabellæ*		358
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,, *Solubile*		357
Saccharum *Carrageen*		138
,, *Cetrariæ*		137
,, Lactis	1 to 2 drms.	358
,, Purificatum		358
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,, *Olei Capsulæ*		361
,, ,, *Mistura*		361
,, Oleum		360
Santalum Album		360
,, *Rubrum*		338
,, *Yasi*		360
Santonica	10 to 60 grs.	361
Santonico		361
Santonini Trochisci		361
Santoninum	2 to 6 grs.	361
Sapo *Albissimus Droguistarum*		362
,, *Albus Hispanicus*		363
,, ,, *Oleaceus*		363
,, Animalis		361
,, *Aromaticus*		364
,, *Butyraceus*		362
,, *Butyrinus*		362
,, Durus	5 to 15 grs.	362
,, *Hispanicus Albus*		363
,, *Jalapinus*		253
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,, ,, Fuscum		362
,, Linimentum		362
,, Pilula Composita. *See* Opium		298
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,, *Indian*		223
Sarsæ Decoctum	½ to 1 pint	365
,, ,, Compositum	½ to 1 pint	365
,, Extractum Liquidum	1 to 4 drms.	365
,, ,, ,, *Compositum*		366
,, Radix		365
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Savin Tops		356
Savon Animal		362
,, *Medicinal*		363
Scammoniæ Radix		366
,, Resina	4 to 8 grs.	366
Scammonii Confectio	10 to 30 grs.	367
,, Mistura	2 oz.	367
,, Pilula Composita	5 to 15 grs.	367
,, Pulvis Compositus	10 to 20 grs.	367
Scammonium	5 to 10 grs.	367
Scammony		368
Schœnocaulon officinale		356
Schuster's Pastilles		33
Scilla	1 to 2 grs.	368
Scillæ Acetum	15 to 40 minims	368
,, Oxymel	½ to 1 drm.	368
,, Pilula Composita	5 to 10 grs.	368
,, Syrupus	½ to 1 drm.	368
,, Tinctura	15 to 30 minims	369
Scille		368
Sclerotic Acid		182
Scoparii Cacumina		369
,, Decoctum	2 to 4 oz.	369
,, Succus	1 to 2 drms.	369
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,, *Carniolica*		369
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,, *Extractum Alcoholicum*		369
,, ,, *Liquidum*		370
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,, *Unguentum*		370
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Senegæ Infusum	1 to 2 oz.	370
,, Radix		370
,, *Syrupus*		370
,, Tinctura	½ to 2 drms.	370
Senna		371
,, *Alexandrina*		371
,, *Indica*		371
,, *Tinnivelly*		371
Sennæ Confectio	1 to 2 drms.	371
,, *Fructuum Extractum Fluidum*		373
,, Infusum	1 to 2 oz.	372
,, Mistura Composita	1 to 1½ oz.	372
,, Syrupus	1 to 2 drms.	372
,, Tinctura	1 to 4 drms.	372
Senne		371
Serpentariæ Infusum	1 to 2 oz.	373
,, Rhizoma		373
,, Tinctura	½ to 2 drms.	373
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,, Præparatum		373
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,, ,, Liquor	10 to 20 minims	378
,, Liquor	$\frac{1}{2}$ to 1 drm.	377
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,, *Sesquicarbonas*		380
Sodii Acetas		379
,, Arsenias	$\frac{1}{16}$ to $\frac{1}{8}$ gr.	379
,, Arseniatis Liquor	5 to 10 minims	380
,, *Benzoas*		380
,, Bicarbonas	10 to 30 grs.	380
,, Bicarbonatis Trochisci	1 to 6 loz.	381
,, Bromidum	10 to 30 grs.	381
,, Carbonas	10 to 30 grs.	382
,, ,, Exsiccata	3 to 10 grs.	382
,, Chloridum	Tonic, 10 to 60 grs. Cathartic, 2 to 4 drms.	383
,, Citro-tartras Effervescens	1 to 2 drms.	383
,, Ethylatis Liquor		384
,, Hypophosphis		384
,, *Hyposulphis*		385
,, Iodidum	3 to 10 grs.	385
,, Nitras		385
,, *Nitris Purus*		386
,, *Oleatis Solutio*		423
,, Phosphas	$\frac{1}{4}$ to 1 oz.	386
,, Salicylas		386
,, Sulphas	$\frac{1}{4}$ to 1 oz.	387
,, Sulphis		388
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,, *Taurocholas*		388
,, Valerianas	1 to 5 grs.	389
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,, *Précipitaté*		399
,, *Sublimé Lavé*		400
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Sparteina		369
Sparteinæ Sulphas		369
Spas of Europe		442
Spearmint Oil		278
,, Water		278
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,, ,, Nitrous Ether		390
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Spiritus (*group*)		389
,, Ætheris	30 to 60 minims	40
,, ,, *Chlorati*		41
,, ,, Compositus	30 to 120 minims	41
,, ,, *Muriaticus*		41
,, ,, *Nitrici. See* Sp. Æth. Nitrosi		390
,, ,, Nitrosi	½ to 2 drms.	390
,, Ammoniæ Aromaticus	20 to 60 minims	57
,, ,, Fœtidus	½ to 1 drm.	53
,, *Ammonii Anisatus*		57
,, Armoraciæ Compositus	1 to 3 drms.	81
,, *Aurantii Compositus*		88
,, Cajuputi	50 to 100 minims	110
,, Camphoræ	10 to 30 minims	120
,, ,, *Fortior*		121
,, Chloroformi	10 to 60 minims	143
,, Cinnamomi	1 to 2 drms.	152
,, *Citri*		261
,, *Frumenti*		391
,, *Gaultheriæ*		210
,, *Glonoini*		291
,, Juniperi	30 to 60 minims	253
,, Lavandulæ	30 to 60 minims	260
,, ,, *Compositus*		260
,, *Limonis*		261
,, *Menthæ*		277
,, ,, Piperitæ	30 to 60 minims	277
,, *Mindereri*		54
,, Myristicæ	30 to 60 minims	288

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,, Rosmarini	30 to 60 minims	355
,, *Salis Dulcis*		41
,, *Saponis Camphoratus*		364
,, *Sinapis*		375
,, Tenuior		392
,, Vini Gallici		392
,, ,, ,, Mistura	1 to 2 oz.	392
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,, *Oleatis Unguentum*		394
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,, Semina		394
,, Unguentum		394
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Starch		63
,, *Iodide of*		65
,, *Maize*		63
,, *Potato*		64
,, *Rice*		63
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,, *Wheat*		63
Stavesacre Seeds		394
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Stibio-Kali Tartaricum		72
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,, *Sulphuratum Aurantiacum*		71
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Stramonii Extractum	$\frac{1}{4}$ gr.	395
,, *Pulvis Compositus*		396
,, Semina		395
,, Tinctura	10 to 20 minims	395
Stramonium Seeds		395
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,, Tincture of Ginger		426
Strophanthi Tinctura		396
Strophanthin		396
Strophanthus hispidus		396
Strychnina	$\frac{1}{30}$ gr. to $\frac{1}{12}$ gr.	396
Strychninæ Liquor Hydrochloratis	4 to 10 minims	397
Strychnos Ignatii		242

Official Names in Roman ; all others in Italics.

ST to SU	Dose.	Page
Strychnos Nux-Vomica		291
Styptic Colloid		158
Styracis Unguentum		397
Styrax *Benzoin*		96
,, *Liquidus*		397
,, Præparatus	10 to 20 grs.	397
Subacetas Plumbi Liquidus		322
Subacetate of Copper		171
Subcarbonate of Potash		329
Subchloride of Mercury		234
Subiodide of Bismuth		102
Sublimate Wood Wool		233
Sublimatum Corrosivum		232
Sublimatus Corrosivus		232
Sublimed Sulphur		399
Subnitras Bismuthi		101
,, *Bismuthicus*		101
Subnitrate of Bismuth		101
Subsulphas Hydrargyri		234
Succi (*group*)		397
Succin		398
Succini Linimentum		398
,, *Oleum Rectificatum*		398
,, *Tinctura*		398
Succinum		398
Succus *Aconiti*		34
,, Belladonnæ		94
,, *Citri Artificialis*		262
,, Conii	30 to 60 minims	161
,, *Digitalis*		176
,, Hyoscyami	½ to 1 drm.	239
,, *Lactucæ*		258
,, Limonis	½ to 2 oz.	261
,, *Liquiritiæ*		216
,, Mori		280
,, Scoparii	1 to 2 drms.	369
,, Taraxaci	1 to 2 drms.	405
Sucino		398
Sucre de Canne		358
,, ,, *Lait*		358
,, ,, *Mûre*		281
Sucrose		358
Suet, Prepared		373
Sugar *of Lead*		318
,, ,, Milk		358
,, Refined		358
Suif de Mouton		374
Sulfate Mercurique		234
,, *de Potasse*		335
,, ,, *Quinine Basique*		344

SU	Dose.	Page
Sulfate de Soude Purifié		387
,, ,, *Zinc*		424
Sulfato Mercurico		234
,, *Potasico*		335
,, *de Potassa*		335
,, *Quinico*		344
,, *de Quinino*		344
,, ,, *Soda*		387
,, *Sodico*		387
,, *Zincico*		424
,, *de Zinco*		424
Sulfito de Soda		388
Sulfur Depuratum		400
,, *Iodatum*		401
Sulfure de Potassium Solide		327
Sulfuro Antimonico Sulfurado		71
,, *(tri) Potasico*		327
Sulphas Chinicus		344
,, *Chinini*		344
,, *Kalicus*		335
,, *Potassæ*		335
,, *Natricus*		387
,, *Quininæ*		344
,, *Sodæ*		387
,, *Zinci*		424
,, *Zincicus*		424
Sulphate of *Aluminium and Ammonium*		49
,, ,, ,, ,, *Potassium*		49
,, ,, Atropine		85
,, ,, Beberine		92
,, ,, Calcium		114
,, ,, Cinchonidine		150
,, ,, Cinchonine		150
,, ,, Copper		171
,, ,, *Duboisine*		177
,, ,, *Hyoscyamine*		240
,, ,, Iron		204
,, ,, ,, Dried		204
,, ,, ,, Granulated		205
,, ,, *Lime*		114
,, ,, Magnesium		273
,, ,, *Manganese*		274
,, ,, Morphine		285
,, ,, *Nickel*		291
,, ,, *Pelletierine*		218
,, ,, *Physostigmine*		312
,, ,, Potassium		335
,, ,, *Quinidine*		347
,, ,, Quinine	1 to 5 grs.	343
,, ,, Sodium		387

SU	Dose.	Page
Sulphate of *Sparteine*		369
,, ,, *Thalline*		408
,, ,, Zinc		424
Sulphide of Antimony		71
,, ,, *Calcium*		116
Sulphidum Stibicum		71
Sulphite *of Magnesium*		273
,, ,, *Potassium*		336
,, ,, Sodium		388
Sulpho-carbolate of *Ammonia*		14
,, ,, ,, *Copper*		14
,, ,, ,, *Iron*		14
,, ,, ,, *Magnesia*		14
,, ,, ,, *Potash*		14
,, ,, ,, Sodium		388
,, ,, ,, Zinc		425
Sulpho-carbolic Acid		14
Sulpho-ichthyolate of Ammonium		241
,, ,, ,, *Sodium*		241
Sulphonal		398
Sulphophenylas Zincicus		425
Sulphur		399
,, *Depuratum*		400
,, Præcipitatum	20 to 60 grs.	399
,, Sublimatum	Stimulant, 10 to 20 grs. Laxative, 20 to 60 grs.	399
,, *Venale*		399
Sulphurated Antimony		71
,, Lime		116
,, Potash		326
Sulphuret of Antimony, Prepared		70
Sulphuretum Potassii Officiale		327
Sulphuric Acid		29
,, ,, Aromatic		30
,, ,, Diluted		30
,, ,, *Monohydrated*		29
,, *Ether*		39
Sulphuris *Chloridum*		400
,, Confectio	1 to 2 drms.	400
,, *Hypochloritis Unguentum*		401
,, Iodidi Unguentum		401
,, Iodidum		401
,, *Lac*		399
,, *Lotio*		399
,, *Præcipitati Unguentum*		399
,, *Trochisci Compositi*		399
,, Unguentum		400
,, ,, *Compositum*		400
Sulphurous Acid	½ to 1 drm.	31
Sumbul Radix		401
,, Tinctura	10 to 30 minims	402

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SU to SY	Dose.	Page
Suppositoria, not official (*group*)		427
Suppositoria, official (*group*)		402
,, Acidi Carbolici c. Sapone	contain 1 gr. each	13
,, ,, Tannici	contain 3 grs. each	32
,, ,, ,, *c. Opio*		33
,, ,, ,, c. Sapone	contain 3 grs. each	32
,, ,, ,, *Vaginal*		33
,, *Basis*		211, 408
,, *Belladonnæ*	contain 1 gr. in each	94
,, *Chloral*		141
,, *Gallæ*		210
,, *Gummi Rubri*		220
,, Hydrargyri	5 grs. Ointment in each	226
,, Iodoformi	contain 3 grs. in each	245
,, *Krameriæ*		257
,, Morphinæ	½ gr. in each	284
,, ,, c. Sapone	½ gr. in each	285
,, Plumbi Composita	3 grs. Acet. Lead in each 1 gr. Powdered Opium	319
Suppositories, Urethral (*group*)		428
,, *Vaginal* ,,		428
Sureau		360
Sus Scrofa		38
Sweet Almond		61
Sydenham's Laudanum		300
Symbols		xix
Symphyti Radix		402
Syrup of Dikinate of Quinia		150, 346
Syrupi (*group*)		402
Syrupus		359
,, *Acaciæ*		3
,, *Acidi Citrici*		16
,, ,, *Hydriodici*		18
,, *Althææ*		48
,, *Apomorphinæ*		75
,, Aurantii	1 to 2 drms.	87
,, ,, Floris	1 to 2 drms.	89
,, *Butyl Chloral*		106
,, *Calcii Hypophosphitis*		114
,, ,, *Manganesii et Potassii Hypophosphitum*		114
,, *Calcis Lactophosphatis*		22
,, *Cascara Sagrada*		349
,, Chloral		140
,, *Codeinæ*		155
,, *Croci*		168
,, *Diacodii*		304
,, Ferri *Bromidi*		192
,, ,, *Hypophosphitis*		196
,, ,, Iodidi	20 to 60 minims	197
,, ,, Phosphatis	1 to 4 drms.	202

Official Names in Roman ; all others in Italics.

SY to TA	Dose.	Page
Syrupus Ferri Phosphatis *Compositus*		202
,, ,, ,, *c. Manganesio*		203
,, ,, ,, *c. Quiniâ et Strychniâ*		203
,, ,, *et Quininæ Hydrobromatum*		192
,, ,, ,, *et Strychninæ Hydrobromatum*		192
,, *Gummi Rubri*		229
,, Hemidesmi	1 to 2 drms.	223
,, *Hypophosphitum Compositus*		196
,, *Ipecacuanhæ*		251
,, ,, *Aceticus*		251
,, *Lactucarii*		258
,, Limonis	1 to 2 drms.	261
,, *Mannatus*		372
,, Mori	1 to 2 drms.	281
,, *Niccoli Bromidi*		291
,, Papaveris	1 drm.	304
,, *Picis Liquidæ*		318
,, *Pruni Virginianæ*		337
,, *Quininæ Dikinatis*		150, 346
,, Rhei	1 to 4 drms.	351
,, ,, *Aromaticus*		351
,, ,, *Compositus*		351
,, Rhœados	1 to 2 drms.	352
,, Rosæ Gallicæ	1 to 2 drms.	354
,, *Rutæ*		356
,, Scillæ	½ to 1 drm.	368
,, *Senegæ*		371
,, Sennæ	1 to 2 drms.	372
,, Tolutanus	1 to 2 drms.	91
,, *Trifolii*		413
,, Zingiberis	1 to 4 drms.	426
Tabaci Folia		403
Tabellæ *Catechu*		133
,, Nitroglycerini		291
,, *Saccharini*		358
Table of Alcohol in Wines		393
,, ,, *Materia Medica*		xxvi
Tamarindus	¼ oz.	404
,, *Indica*		404
Tannate of Cannabin		122
,, *Mercury*		236
,, *Pelletierine*		218
,, *Quinine*		346
Tannic Acid	2 to 10 grs.	31
,, ,, Glycerine of		32
,, ,, Lozenges		33
,, ,, *Ointment*		33
,, ,, ,, *with Opium*		33
,, ,, *Pessary*		33
,, ,, Suppositories		32

TA	Dose.	Page
Tannic Acid Suppositories *with Opium*		33
,, ,, ,, with Soap		32
Tapeworm Remedy		217
Tar		317
,, *Capsules*		318
,, *Coal*		317
,, Ointment		317
,, *Pills*		318
,, *Water*		317
Taraxaci Decoctum	2 to 4 oz.	405
,, Extractum	5 to 15 grs.	405
,, ,, Liquidum	15 to 120 minims	405
,, Radix		404
,, Succus	2 to 4 drms.	405
Taraxacum Officinale		404
Tartar Emetic		71
Tartarated Antimony		71
,, Iron		206
,, Soda		378
Tartaric Acid		33
Tartarus Boraxatus		337
,, *Depuratus*		337
,, *Ferratus*		206
,, *Natronatus*		378
,, *Stibiatus*		72
Tartras Antimonico Potassicus		72
,, *Ferrico-Kalicus*		206
,, *Ferrico-Potassicus*		206
,, *Kalico-Natricus*		378
,, *Kalico-Stibicus*		72
,, *Kalicus*		336
,, ,, *Acidus*		337
,, *Natrico-Kalicus*		378
,, *Potassæ*		336
,, *Sodico-Potassicus*		378
,, *Stibico-Kalicus*		72
Tartrate *d'Antimoine et de Potasse*		72
,, *Borico-Potassique*		337
,, *Ferrico-Potassique*		206
,, *of Morphine*		285
,, *de Potasse Acide*		337
,, ,, ,, *et de Soude*		378
,, ,, ,, *Neutre*		336
,, of Potassium		336
,, ,, *Quinine*		346
,, ,, *Soda and Potash*		378
Tartrato Antimonico Potasico		72
,, *de Potassa*		336
,, ,, *e de Antimonio*		72
,, ,, ,, *Ferro*		206

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Tartrato de Potassa e de Soda . . . 378
,, *Ferrico-Potassico* . . . 206
,, *Potassico* . . . 336
,, *Sodico-Potassico* . . . 378
Taurocholate of Sodium . . . 388
Teinture Balsamique . . . 97
,, *de Camphré Conc.* . . . 120
,, *d'Essence de Citron* . . . 261
,, ,, ,, *Menthe* . . . 277
,, ,, ,, *Romarin* . . . 355
,, *de Noix Vomique* . . . 293
,, ,, *Quinquina* . . . 149
,, ,, *Raifort Comp.* . . . 81
Terchloride of Formyl . . . 142
Terebene . . . 406
,, *Capsules* . . . 406
Terebinthina Canadensis . . . 406
,, *Chia* . . . 406
,, *de Chio* . . . 406
,, *Copahiba* . . . 163
,, *Laricis* . . . 259
,, *Veneta* . . . 259
Terebinthinæ Confectio . . . 1 to 4 drms. . . . 407
,, Enema . . . 407
,, Linimentum . . . 407
,, ,, Aceticum . . . 408
,, Oleum . . . 10 to 30 minims . . . 406
,, Unguentum . . . 408
Terebinthine de Chio . . . 406
Tertiary Amyl Nitrite . . . 63
,, *Amylic Alcohol* . . . 63
Test Solution of Starch . . . 64
Testing, Articles employed in . . . 430
,, *Solutions for* . . . 432
,, ,, *Volumetric* . . . 435
Tetrachloride of Carbon . . . 144
Tetraiod-Pyrrol . . . 246
Tetroxide of Osmium . . . 25
Thallinæ Sulphas . . . 408
Theina . . . 108
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Theobroma Cacao . . . 408
Theobromatis Oleum . . . 408
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Thermometric Scales compared . . . xxiii
Thus Americanum . . . 409
Thymol . . . 409
Thymolis Liquor . . . 410
,, *Vapor* . . . 410
Thymolum . . . 409

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Thymus Vulgaris		409
Timol		409
Tinctura *Absinthii*		1
,, Aconiti	5 to 15 minims	35
,, ,, *Dr. Fleming's*		36
,, *Actææ Racemosæ*		145
,, Aloes	1 to 2 drms.	47
,, ,, *Composita*		47
,, *de Ambar Composta*		398
,, *Ammon. Composita*		54
,, *Anisi*		67
,, *Anthemidis*		68
,, *Apocyni*		74
,, Arnicæ	½ to 1 drm.	81
,, Asafœtidæ	½ to 1 drm.	83
,, Aurantii	1 to 2 drms.	87
,, ,, *Dulc.*		87
,, ,, Recentis	1 to 2 drms.	87
,, Belladonnæ	5 to 20 minims	94
,, *Benzoini*		97
,, ,, Composita	½ to 1 drm.	97
,, *Boldo*		103
,, *Bryoniæ*		105
,, Buchu	1 to 4 drms.	105
,, *Cachou*		133
,, *Calendulæ Florum*		117
,, Calumbæ	½ to 2 drms.	118
,, *Camphoræ*		120
,, ,, Composita	15 to 60 minims	120
,, Cannabis Indicæ	5 to 20 minims	122
,, Cantharidis	5 to 20 minims	124
,, Capsici	10 to 20 minims	126
,, ,, *Fortior (Turnbull)*		126
,, *Cardamomi*		129
,, ,, Composita	½ to 2 drms.	128
,, *Carminativa*		129
,, Cascarillæ	½ to 2 drms.	131
,, *Castorei*	½ to 1 drm.	132
,, Catechu	½ to 2 drms.	133
,, ,, *Composita*		133
,, *Chinæ*		149
,, ,, *Calisayæ*		149
,, ,, *Composita*		150
,, ,, *Flavæ*		149
,, ,, *Rubræ*		149
,, ,, *Simplex*		149
,, Chiratæ	½ to 2 drms.	139
,, Chloroformi Composita	20 to 60 minims	143
,, ,, et Morphinæ	5 to 10 minims	314
,, *Cicutæ. See* Tinctura Conii		162

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TI	Dose.	Page
Tinctura Cimicifugæ	15 to 60 minims	145
,, Cinchonæ	½ to 2 drms.	149
,, ,, Composita	½ to 2 drms.	149
,, ,, *Huxham's*		150
,, Cinnamomi	½ to 2 drms.	152
,, Cocci	30 to 90 minims	154
,, Colchici *Composita*		157
,, ,, *Florum*		157
,, ,, Seminum	10 to 30 minims	157
,, *Collinsoniæ*		157
,, *Colocynthidis*		160
,, Conii	20 to 60 minims	162
,, *Convallariæ*		163
,, *Coto*		165
,, Croci	½ to 2 drms.	168
,, Cubebæ	½ to 2 drms.	170
,, Digitalis	10 to 30 minims	176
,, Ergotæ	5 to 30 minims	181
,, ,, *Ammoniata*		182
,, *Erythrophlœi*		183
,, *de Estrychnina*		397
,, *Eucalypti*		184
,, *Euonymi*		185
,, *Euphorbiæ Piluliferæ*		185
,, Ferri Acetatis	5 to 30 minims	191
,, ,, *Acetici Æther.*		191
,, ,, *Chlorati*		199
,, ,, *Chloridi*		199
,, ,, Perchloridi	10 to 30 minims	199
,, Gallæ	½ to 2 drms.	209
,, Gelsemii		212
,, *Gentianæ*		213
,, ,, Composita	½ to 2 drms.	212
,, *Gossypii Radicis*		217
,, *Guaiaci*		219
,, ,, Ammoniata	½ to 1 drm.	219
,, *Guaranæ*		220
,, *Gummi Rubri*		220
,, *Hamamelidis*		223
,, *Hellebori*		223
,, *Hydrastis*		237
,, Hyoscyami	15 to 60 minims	239
,, ,, *Radicis*		240
,, *Ignatiæ Amaræ*		242
,, Iodi	5 to 20 minims	248
,, ,, *Decolorata*		249
,, ,, ,, *Fortior*		249
,, *Ipecacuanhæ*		251
,, Jaborandi	30 to 60 minims	251
,, Jalapæ	½ to 2 drms.	253

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	Dose.	Page
Tinctura *Jalapæ Resinæ*		253
,, *Kamalæ*		254
,, Kino	½ to 2 drms.	256
,, Krameriæ	½ to 2 drms.	257
,, *Lactucarii*		258
,, Laricis	20 to 30 minims	259
,, Lavandulæ Composita	½ to 2 drms.	260
,, ,, *Rubra*		260
,, Limonis	½ to 2 drms.	261
,, Lobeliæ	10 to 30 minims	268
,, ,, Ætherea	10 to 30 minims	268
,, Lupuli	½ to 2 drms.	269
,, *Lupulini*		268
,, *Maticæ*		276
,, *Moschi*		287
,, Myrrhæ	½ to 1 drm.	289
,, ,, *et Boracis*		104
,, Nucis Vomicæ	10 to 20 minims	292
,, Opii	5 to 40 minims	298
,, ,, Ammoniata	½ to 1 drm.	299
,, ,, *Benzoica*		120
,, ,, *Camphorata*		121
,, ,, *Crocata*		300
,, ,, *de Opio Composita*		121
,, *Phosphori Composita*		310
,, *Physalis*		310
,, *Physostigmatis*		311
,, Podophylli	15 to 30 minims	324
,, ,, *Ammoniata*		324
,, *Pomi Ferrati*		190
,, *Pruni Virginianæ*		338
,, *Pulsatillæ*		338
,, Pyrethri		339
,, ,, *Florum*		339
,, Quassiæ	1 to 2 drms.	341
,, *Quillaiæ*		342
,, *de Quina*		149
,, ,, *Composita*		150
,, Quininæ	1 to 1½ drms.	343
,, ,, Ammoniata	1 to 2 drms.	345
,, Rhei	Stom. 1 to 2 drms. Purgative, ½ to 1 oz.	351
,, ,, *Amara*		351
,, ,, *Vinosa*		352
,, Sabinæ	20 to 60 minims	357
,, Scillæ	10 to 30 minims	369
,, *Scopolæ*		370
,, Senegæ	½ to 2 drms.	371
,, Sennæ	1 to 4 drms.	372
,, Serpentariæ	½ to 2 drms.	373
,, Stramonii	10 to 30 minims	395

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TI to TR	Dose.	Page
Tinctura *Strophanthi*		396
,, *Strychni*		293
,, ,, *Etherea*		293
,, *Succini*		398
,, Sumbul	10 to 30 minims	401
,, *Thebaica Benzoica*		120, 121
,, Tolutana	15 to 60 minims	91
,, Valerianæ	1 to 2 drms.	416
,, ,, Ammoniata	½ to 1 drm.	417
,, ,, *Ætherea*		417
,, Veratri Viridis	5 to 20 minims	418
,, *Warburgi*		347
,, *Whyttii*		150
,, Zingiberis	10 to 60 minims	426
,, ,, Fortior	5 to 20 minims	426
Tincturæ (*group*)		410
Tinnivelly Senna		371
Tintura Alcoholica de Quina		149
Tisane d'Oranger		87
,, *d'Orge*		224
,, *de Polygala*		371
,, ,, *Quinquina*		149
,, ,, *Ratanhia*		257
,, ,, *Salsepareille*		365
,, ,, *Valeriane*		416
Tobacco Leaf		403
Tolu Balsam		91
Toughened Caustic		79
,, Nitrate of Silver		79
Tragacantha	20 grs.	412
Tragacanthæ Glycerinum		412
,, Mucilago	1 oz.	412
,, Pulvis Compositus	10 to 60 grs.	413
Tragacanto		412
Traumatic Balsam		97
Traumaticine		221
Treacle		409
Trebol Acuatico		279
Trementina de Alerce		259
,, ,, *Chio*		406
Tribromphenol		14
Trichloracetic Acid		6
Trichlorphenol		14
Trifolium		413
,, *Fibrino*		279
,, *Fibrinum*		279
Trigo		188
Tri-Iodide of Caffeine		109
Trinitrate of Glyceryl		291
Trinitrin		291

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Trinitrophenol			27
Trisulphuretum Kalicum			327
Tritici Decoctum			413
,, *Extractum Liquidum*			413
Triticum Repens			413
,, *Sativum*			63, 188
Trituratio Elaterini			179
Trochisci (*group*)			413
,, Acidi Benzoici	½ gr. in each	1 to 5 lozenges	9
,, ,, *Carbolici*			13
,, ,, Tannici	½ gr. in each	1 to 6 lozenges	33
,, *Aconiti*			36
,, *Althææ*			48
,, *Ammonii Bromidi*			56
,, ,, *Chloridi*			58
,, Bismuthi	2 grs. in each	1 to 6 lozenges	102
,, Catechu	1 gr. in each	1 to 6 lozenges	133
,, Ferri *Carbonatis Saccharatæ*			194
,, ,, Redacti	1 gr. in each	1 to 6 lozenges	206
,, *Guaiaci*			219
,, *Gummi Rubri*			221
,, Ipecacuanhæ	¼ gr. in each	1 to 3 lozenges	250
,, ,, et Morphinæ			250
,, *Kino*			256
,, *Krameriæ*			257
,, Morphinæ	$\frac{1}{36}$ gr. in each	1 to 2 lozenges	285
,, ,, et Ipecac.		1 to 2 lozenges	285
,, Opii	$\frac{1}{10}$ gr. Ext.	1 to 2 lozenges	299
,, Potassii Chloratis	5 grs. in each	1 to 6 lozenges	330
,, *Pyrethri*			339
,, Santonini	1 gr. in each	1 to 6 lozenges	361
,, Sodii Bicarb.	5 grs. in each	1 to 6 lozenges	381
,, *Sulphuris Compositi*			399
Trovisco			279
Trypsin			301
Turnbull's concentrated Tincture of Capsicum			126
Turnera			174
Turner's Cerate			110
Turpentine			347
Turpentine Oil			406
Turpeth Mineral			233
Ulex Europæus			414
Ulexine			414
Ulmi Decoctum			414
Ulmus			414
,, *Campestris*			414
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